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PART FIRST.
ORIGINAL COMMUNICATIONS.

ART. I.—*Some Observations on Hip-Joint Disease, and its Rational Treatment.* By LOUIS BAUER, M. D., Physician and Surgeon (Berlin), Member of the Royal College of Surgeons of England; Corresponding Fellow of the Medical Society of London, late Surgeon of the Royal Orthopædic Institution at Manchester, etc., etc.

THE charm of celebrated names and the so-called scientific authorities, have caused considerable difficulties to the material progress of knowledge by propagating, but too often, fictions and hypotheses in the form of deliberate observation and diligent inquiries, thus setting matters of great moment at rest, and deterring others from appropriate investigations. And in no other branch of science, has the mischief of unfounded theory been more deeply felt, than in those relying entirely on the solid foundation which facts alone afford, minute study of nature herself, as in natural philosophy and medicine.

In science, no other authority should be recognized, than that of indisputable verity; phantasms are better limited to the department of romance, to which they belong. We may, however, congratulate ourselves, that the time of implicit belief in scientific celebrities is fast passing away, and medical inquirers are no longer prevented, by the mere theorems of distinguished men, from following their own course of investiga-

ting those numerous pathologic problems which we meet with every day. But still a very augean labor, and the combined exertions of men alike devoted to truth, science, and suffering humanity, will yet be required, to bring many medical doctrines in strict conformity with the actual operations of nature.

Hip-joint disease, and the rules of its treatment, are subjects apparently laboring under similar disadvantages to those just complained of, namely, that of having been obscured for a considerable time under the influence of hypotheses which were totally void of real proofs. I am sorry to state that German surgeons of distinction, especially Rust, and others, have largely contributed to deceive the profession as to the nature of hip-joint disease and its rational treatment. It is remarkable, that although daily experience shows the direct contrary, and that notwithstanding some authors have lately, supported by undeniable facts and experiments, pointed out also the fallacy of the established opinion of the nature of hip-joint disease and its collateral symp we still find numerous practitioners, who adhere to the notions of the old school, and pursue a plan of treatment which never has and never could effect any beneficial result, but on the contrary, has invariably sacrificed the form of their patients, if not life itself.

Under such circumstances, I feel justified in bringing the subject in question before the profession; and while thus giving rise to its renewed consideration, I at the same time submit my views on hip-joint disease to a critical appreciation. I sincerely hope some truth will be the result of this literary effort, and this is the only object desired by the author.

It cannot be expected, nor is it necessary, that I should discuss at length the details of hip-joint disease; and I shall therefore confine myself strictly to the consideration of those points, which are either novel or matters of dispute, and endeavor to give a final solution and critical analysis, highly desirable both to science and the afflicted. Although I may happen to bring forward in this article some new facts and deductions, I beg to decline originality or novelty, as far as I am myself concerned. My whole merit, if such it be, redu-

ces itself to a careful compilation of the opinions of Drs. Buehring, Lorinser, Bonnet, Bishop, and others, and the corroboration of their views by my own researches and experience, which embrace, however, a considerable time and material. I deeply regret that I could not procure in proper time the paper on this very subject, by Prof. March of Albany, which was read to the American Medical Association. I should have availed myself of it with that consideration which is due to its distinguished author.

Some writers define hip-joint disease to be an inflammation and subsequent ulceration of either the synovial lining of that joint, or the articular cartilages, or the caput femoris, admitting the unavoidable transmission of the morbid process from one to another. According to my own experience, in all genuine cases of hip-joint disease, the primitively affected part is the osseus portion of the femoral head, while the cartilages and synovial membrane only become secondarily involved, and subsequently destroyed by the disease. The definition of hip-joint disease ought therefore to be limited to those cases, and not likewise extended to the primary affection of the synovial sac, which may lead to hydrarthus, pyodrarthus and degeneration, but scarcely ever to that disease of protean nature, known under the name coxalgia, morbus coxæ, or coxarthrocace. The cartilages are, in general, so inert, torpid, and of such slight susceptibility to affections of any description, that it is incomprehensible why the articular cartilages of the femoral joint should be more subject to the inflammatory and suppurative process, than others of the same organization and vitality.

Another difference of opinion exists as to the causes presumptive. I think, however, that the majority of medical men who have paid some attention to the subject in question, have agreed in attributing to the tuberculous deposits made in the spongy structure of the femoral head, the exclusive and proximate cause of hip-joint disease; at the same time admitting that external injuries, cold, gastric malady, fever, &c., may serve as the first shock, and greatly accelerate the softening and subsequent elimination of the deposited matter; in point of fact, may co-operate with the noxiousness of the tuber-

cular deposits already formed; but by no means are they, of themselves, sufficient to cause the affection in question. Indeed, if such trifling causes as those above mentioned, and which, moreover, are of daily occurrence, were, by themselves, sufficient to produce hip-joint disease, this malady would certainly be much more frequent than it actually is. Moreover, wherever we meet with a case of hip-joint disease, we invariably find a certain age, especially subject to the ravages of the scrofulous dyscrasy, and patients afflicted with hip-joint disease are usually highly distinguished by unmistakable symptoms of that malady. Again, we find, both in the discharge and in the cellular texture of the caput femoris, when examined post mortem, the amorphous particles of tubercular deposit. Another argument is, finally, the simultaneous occurrence of hip-joint disease with tubercles in other organs of the body.

It is of great importance in the treatment of hip joint disease, that its essential origin should be properly understood and appreciated; and be it therefore repeated—

1. Hip-joint disease is primarily seated in the caput femoris.

2. Hip-joint disease originates exclusively from tubercular depositions into the cells of that bone.

3. The object which nature purposes to realize by those depositions, is the elimination of the noxious tubercular substance from within the organism.

4. The softening of the tubercles begins, either in consequence of some accidental traumatic or other injury, or spontaneously, by the gradual juxtaposition and augmentation of the tuberculous matter, which becomes at last obnoxious to the bone, and sets up reaction and inflammation.

5. As soon as this process takes place, the tuberculous mass softens, and approaches the surface of the bone, involving more or less the periosteum, cartilage, and synovial lining of the joint in destruction.

6. If the matter reaches the external surface in the shortest way, by penetrating the neck of the femur—a rare case—the destruction may be trifling, and the cure soon consummated, as far as the joint itself is concerned. But, if the matter enters the articular cavity, a more extensive destruction must necessarily be the result. In this latter case we perceive a

thickening and softening of the articular cartilage, which separates into fragments, and, sloughing with its bone, floats about within the articular cavity, adding the new disadvantage of a foreign body to the disease. The synovial sac ulcerates consequently, and the whole joint is more or less transformed into an osseous ulcer. Small fistulæ lead in different directions to the external surface, and the environs of the joint are rather infiltrated, and indurated.

7. In this state the disease continues as long as there are still tuberculous deposits and cartilaginous fragments to be removed, provided that death does not earlier close the scene.

8. Nature effects the restoration in various ways, either by establishing a true anchylosis, with deposits of bony matter within and around the acetabulum, with the loss of all mobility of the joint, unquestionably a very rare case, or the two opposite articular surfaces unite by fibrous substance (spurious anchylosis), which is the usual termination of hip-joint disease. In extremely rare cases, the whole joint is filled up with fibrous formations, interfering greatly with the mobility of the hip-joint; but, in most of the cases, fibrous adhesions exist only partially, while another part of the articular surface is denuded even of its cartilaginous covering and smooth-like, being polished. As a modification of the termination of hip-joint disease, we meet also with luxations of the head of the femur. It is easily understood that cases of the last description must necessarily be of very limited number, and that a most extensive carious destruction is to be premised, both of the femoral head, and the supercilium and labrum acetabuli. The luxation of the femur is, by no means, of such frequent occurrence as Rust and other German authors have stated; but of this hereafter.*

I wish now to direct attention to some symptoms, which, although of a more secondary character, are, nevertheless, of great importance both to science and practice, and which, up to this time, have not been duly appreciated.

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* The writer has the pleasure to state, that, by the kind and generous permission, of Dr. Parker, Professor of Surgery at the College of Physicians and Surgeons, he has had the opportunity of illustrating the principles and practice set forth above, in a clinical lecture before the students of that College, for which he tenders that gentleman his most hearty thanks.

Firstly, the immobility of the afflicted joint, which is so complete, that scarcely the slightest movement can be effected. If the patient is induced to execute a movement, it will be easily perceived that such is not executed by the hip-joint, but by the whole pelvis in its lumbar articulation.

It is beyond any doubt, that the fixing of the thigh-bone is, to a certain extent, voluntary on the part of the patient, produced for the purpose of escaping the excessive pain caused by the slightest movement. But it is also certain that another agency is called into operation, independent of volition, for we find the same immobility existing during sleep, when the will of the patient is dormant. No other physiological solution of this phenomenon offers itself than the reflex action of the spinal cord, excited by the irritation going on within the affected hip-joint. This reflex action manifests itself in many other instances under the same or similar conditions, and accompanies, more or less, the inflammatory processes of other joints, especially those of the vertebral articulations, producing that peculiar stiffness of the spinal column so characteristic of the disease. But hereby the reflex action is not exhausted, on the contrary, it displays a far greater influence, which I shall now proceed to notice, viz.:

Secondly, the apparently elongated and shortened state of the affected extremity.—The elongation may be observed now and then in the commencement of the disease, while the shortening is characteristic of the later stages. But this is by no means so constant as Rust, Chelius, and others have endeavored to show, nor is the physiological synthesis of those writers any thing beyond speculation and theory; for we do not meet with the elongation so regularly as to justify us in establishing a *stadium elongationis*, nor is the shortening of the leg a constant symptom of the later periods of the hip-joint disease, but, on the contrary, appears far more frequently at its very commencement, and remains not only the constant companion to its exit, but even surpasses it, and afterwards constitutes a most conspicuous and lamentable disfiguration. Rust supposed the elongation to originate in the inflammatory swelling of the joint and its integral parts, whereas the shortening he attributed to a luxation of the caput femoris upon the os ilium. But this opinion will prove itself utterly falla-

cious when it is put to a deliberate test. Theoretically, it is impossible to deduce from the mere swelling of a thin cartilaginous covering, an elongation of the leg amounting to some inches, and any person who has ever seen that deformity of the hip-joint, caused by true luxation, would never confound it with the formal change which takes place in consequence of the shortening of the leg by hip-joint disease. But let us examine without prejudice the actual state of the patient, and inquire into its physiological nature.

In a case of hip-joint disease accompanied by apparent elongation of the limb, if we place the patient on an even and horizontal surface, and then compare the relative position of the different parts, we perceive that the pelvis is in a state of declivity, the healthy side being drawn upwards, and the affected side pushed downwards; the shoulders are likewise displaced from their equilibrium, their axis of motion forming with the horizon an acute angle; and finally the spinal column is simply curved and distorted towards the affected side, in strict accordance with the declivity of its basis. We find, moreover, the dorsal and abdominal muscles on the healthy side in a state of moderate contraction. It requires scarcely any further proof of the assertion, that the elongation before us is but apparent and not real, and caused exclusively by muscular actions; for in taking and comparing the measurement of both legs, commencing at the crista of the os ilium above the hip-joint, and proceeding to the trochanter-major, or to the knee and foot joints, we find but a trifling difference in the actual length of both limbs. Should any doubt remain, we may place the patient under the influence of chloroform, and thereby putting the muscular action entirely at rest, at once restore the proper equilibrium of pelvis, spine, and shoulder axis.

Although the patient, to a slight extent, may produce that position of the pelvis just described by voluntary muscular action, still I believe that for the most part it originates in reflex action, for the position cannot voluntarily be adhered to and remains the same during sleep. The apparent elongation of the effected extremity is, however, but of short duration, and is followed by the direct reverse symptom, namely, the apparent shortening of the leg. This symptom

depends exactly and most unquestionably on the same physiological cause, viz., muscular action under the influence of the reflex function of the spinal cord, whereby only the special muscular groups are changed. The morbid side of the pelvis is drawn upwards, the corresponding shoulder lowered, and the spine forms a simple distortion from its perpendicular, towards the opposite side. This position once assumed by the patient, gradually gets worse, and is placed beyond volition. Even here we may easily detect the real state under such delusive appearances, by measuring the angle which the transversal axis of the pelvis forms to the horizon; by comparing the actual length of both legs, in the way above mentioned, and finally, by freely administering chloroform to the patient, whereby movement and equilibrium may be easily restored for a few minutes, which is however sufficient for the purpose of diagnosing the head of the femur in its proper place. No doubt, when the hip-joint disease has caused any considerable destruction either of the femoral head itself or the posterior superior portions of the acetabulum, a true luxation may ultimately take place, the fragment of the femoral head assuming a new position on a higher plane and more backwards at the os ilium. But those cases are not only exceedingly rare, but also discriminated easily. The distance between the trochanter major and the crista ossis ilium is diminished, the nates is fuller, the movements rather slack, etc.

Thirdly.—There are still some other deformities in pathologic connection with hip-joint disease, which deserve our full attention. As such, we have to recognize the peculiar position of the morbid extremity, being in a state of flexion both in the hip and knee-joints; in adduction and turning inwards; further, the abnormal inclination of the pelvis, amounting to an angle of from sixty-five to eighty degrees; besides a slight twisting of the pelvis on its longitudinal axis, whereby the healthy side projects and the morbid one retracts. Corresponding with the increased inclination of the pelvis, we meet with an inflection of the lumbar vertebræ towards the front (*lordosis lumbalis*).

If it happens that a patient is suffering from hip-joint disease on both joints, which is, however, exceedingly rare, we find a similar deformity of all the parts just enumerated, as we find them in hip-joint disease affecting one side only.

This, again, contradicts the premise of luxation, because one leg appears short and the other elongated, while by true luxation of the head of the femur, and also in pseudo-union of fracture of the collum femoris by means of fibrous substance, in fact, in all those cases where the centre of motion is displaced, and higher than in the normal state, the patient lowers the affected side, in order to equalize the length of both extremities, and to use them alike. Moreover, deformities of this description very often happen in consequence of minor affections of the hip-joint, as its surrounding parts. I have just now a patient under my care from Indiana, who has in all probability suffered only of rheumatismus cosæ, although the meanwhile established deformity is very considerable, the diseased leg being four inches shorter than the other. There has been no caries, no material destruction of any kind; the flexion in the hip-joint is quite free, but the extension and abduction are prevented by the contraction of the interested muscles, which lay like cords at the limb.

In case any other evidence is required in proof that the caput femoris remains, in the generality of cases of hip-joint disease, at its proper-place within the acetabulum, I need but refer to the scores of post mortem examinations on record, in which the femoral head was found so, in spite of the affected extremity being shortened to the extent of three or more inches, thus leaving no doubt about the correctness of my statement. We are perfectly aware that, after the hip-joint disease has passed its phases, the anchylosis has been established, and the patient is gradually beginning to use the affected extremity, this limb, under ordinary circumstances, neither recovers its circumference nor its apparent length, but on the contrary, the leg remains feeble, emaciated, and continues more or less its altered position of flexion, adduction, and turned inwardly; the pelvis also remains in its distorted relation. The position of the femur may perhaps become amended by its own weight, which counteracts the reflex action of the spinal cord; but the position of the pelvis remains permanent, giving rise to that singularity of gait and walk, common to all patients who have suffered from hip-joint disease, and which consists in a rolling movement of the trunk, on the diagonal diameter of the pelvis, from the healthy side to the affected.

One fact deserves to be mentioned in reference to the distortion of the spinal column; namely, that scoliosis, which necessarily accompanies the declivity of the pelvis, is only present in the erect position of the patient, while it disappears in the recumbent, independently of the length of time during which the distortion has existed, thus giving a most important evidence against the established opinion, that muscular actions, in themselves, are a sufficient cause for permanent deformities of the spine. This special subject, however, will have due consideration in a subsequent article.

In now drawing the attention of the reader to the *treatment* of hip-joint disease, I shall limit myself to a few points, which may be considered of the greatest importance in the discussion of the subject before us.

Let us therefore ask, *Does the present state of our knowledge afford us the means of shortening the process of hip-joint disease?*

This question is one of great moment, and therefore deserving the gravest consideration of the profession. In entering upon it, we should bear in mind, that hip-joint disease consists in nothing else than tuberculous deposits within the parenchyma of the femoral head and its subsequent elimination; that it is the ultimate effect of the efforts of the *vis naturæ medicatrix* to free the organism of a heterogeneous substance, highly obnoxious to its health and existence, and that inflammation, suppuration, &c., are but the means employed for that purpose. If this opinion be true, and, I think, the instituted inquiry and experience places it beyond any doubt, the medical practitioner has to adopt a treatment which directly co-operates with the efforts of nature in speedily removing the obnoxious tuberculous matter from within the limits of the organism.

Two medical agencies have been put in requisition to realize this object; they are, external derivation and the resection of the diseased portion of the femur. During the last century derivatory appliances, near the affected joint, have been used to a great extent, from the simple rubefacient up to the positive destruction of the skin by cauterium actuale and potentiale, and a fair trial has been consequently given to them to prove their beneficial results. The numerous advocates of derivation assert boldly, that nature was doing the same

by the operation of metastasis, in depositing obnoxious substances in organs of inferior consequence, thus freeing others of great importance for the maintenance of life, of which, indeed, daily experience furnishes us with many instances. If metastasis were identical with derivation, the conclusion would be correct. But I entirely disagree on this point; for the metastatic deposits of nature are materially of the same quality, whereas artificial derivation merely excites inflammation, and produces a discharge of ordinary character. Thus we may artificially transfer an erythematous inflammation of the pleura upon the skin by a mustard poultice, and put a positive stop to primary disease; in fact, we may succeed in subduing diseases by derivation, in as far as both the disease and the effect of derivation constitute the same character; but it might be an impossibility to influence by derivation the process of hip-joint disease, where the cause of the affection is a specific substance purposely deposited for elimination, while inflammation is the mere effect of the undue pressure upon the osseous texture. And, supposing derivation could even direct the tuberculous matter from the system to the artificial issue, which is by no means evident, it would in no way affect the deposits already formed within the cells of the femoral head. There the inflammatory process will and must go on for the final elimination of the tuberculous deposits. Any positive counteraction can only tend to protract the course of hip-joint disease to an unnecessary length, and place even life in jeopardy. While it is thus exceedingly doubtful, at the least, whether derivation has any influence upon the tuberculous disease in general, and while it is positively impossible that derivation should affect the tuberculous deposits already formed, we know it to be a fact, that extensive issues particularly cause a new irritation, enfeeble the system already emaciated, and may even endanger life.

Thus we must unavoidably come to the conclusion, that derivation, in cases of hip-joint disease, is not only to be dispensed with, but even to be severely condemned. But what are the results that experience gives us in reference to the usefulness of derivation in hip-joint disease. I need only state, that it has been entirely abandoned both in England and Ger-

many, where, formerly, scarcely one patient escaped the application of the *ferrum candens.*

I shall be deemed excusable for having devoted so much space to the discussion of this question when I state, that I have met, in this city, with a favorable opinion in reference to derivation in such cases, and even in quarters where the highest talents, with the most ardent scientific exertions, are in full operation.

As to the usefulness of resecting the caput femoris in hip-joint disease, to answer the indication of speedily removing the morbid substance destined for elimination, I must candidly confess that I have had but little opportunity of witnessing and watching personally the effects of that operation. In as far as statistics afford the premises for correct inferences, I must decidedly object to it, and John Gay, Esq., the highly talented surgeon of the Royal Free Hospital in London, has, in his elaborate paper on the treatment of the ulcerative diseases of the joints, read before the Medical Society of London, stated, with convincing arguments, that very little good is to be expected from so extensive an operation. According to the statistics of this operation, which that surgeon placed under the consideration of that learned and respectable body, the greater number of the patients subjected to the operation in question died from the immediately succeeding inflammatory reaction, while another fraction died from tuberculosis, and a very insignificant proportion only survived. This is a decidedly discouraging statement, and its correctness and truthfulness cannot be questioned.

In the place of resection, Mr. Gay proposed free incisions into the diseased joint, and even into those parts of the bones filled with tuberculous deposits. This practice he had already followed during a certain period with the best success, although only in the minor joints. A very lively discussion ensued, in which many eminent members of the profession participated. Experience, reasoning, and sophism were brought to bear against the new practice, but with the least possible success. The author in replying at the end of the debate to his antagonists, remarked that a diseased joint was nothing else than an ulcer in the bone, or cartilaginous texture; the joint was partly de-

stroyed, and had thus ceased to exist. The violent reaction which regularly follows the opening of a joint, referred only to healthy articulations, but in no way to articular ulceration. The free access of air to the articular cavity was less injurious than the decomposed matter, tuberculous substance, or the fragments of mortified cartilage.

To procure in all deep-seated abscesses and ulcerations a speedy and free issue, was a fundamental principle in surgery, and especially in those cases strictly to be adapted, where fragments of mortified cartilage, identical with foreign bodies, constantly keep up irritation and suppuration, thus protracting the termination of the disease. All *a priori* arguments could not dispute the beneficial results, already attained by his practice.

These new principles of Mr. Gay opened at once a new era for the treatment of the joint diseases, and although old surgeons shook their heads at the boldness of modern surgery, the younger part of the profession embraced the new chance for success with eagerness.

In some of the metropolitan hospitals, as well as in county infirmaries, the new measures were frequently put to the test, and as far as I could learn, the results have been favorable. My own experience of Mr. Gay's treatment, both in London and Manchester, obliges me to declare in its favor; it is in my opinion the only direct remedy for the abbreviation of hip-joint disease, and it is not, to my knowledge, followed by any dangerous reaction or fatal consequences. I understand, that Dr. John O. Stone, the distinguished surgeon of Bellevue Hospital, New-York, advocates the same practice, and has since 1847 derived great benefit from it.

The next important question is: *Do the modern improvements in surgery furnish us with the auxiliary means of preventing or curing those deformities, which are the constant associates of hip-joint disease?*

But a few years ago, the surgical literature of France, Great Britain and Germany, was devoid of any guidance as to the orthopedic treatment of deformities in cases of hip-joint disease, nor even were directions given as to the most comfortable and proper position in which to place the patient. The want of proper regard as to the collateral deformities, did not rest with the hip-joint only, but extended even to the

minor joints where the necessary provision could be taken far easier. As it was thus left to the patient, to place and keep the affected parts in a position convenient to his comfort and rest, and no attention was paid to the future form, position, or usefulness of the limb, it does not at all surprise us that most of the patients left their sick beds deformed, and more or less mutilated. This malpractice had existed sufficiently long, when, at length, the attention of the profession was directed to it. But the remedies and contrivances being put into operation, were more especially directed against the effects of articular diseases. The necessity of preventing the deformities by the seasonable application of mechanical means still escaped the notice of surgeons.

Strohmeyer has just claims on the gratitude of both surgeon and patient, for the reintroduction of tenotomy and myotomy into surgery, and Dieffenbach has essentially contributed to the rational performance of those operations for the cure of articular deformities. Some time had still to elapse, before surgeons were induced to take some steps towards preventing them, which is, however, now acknowledged as a surgical rule. While thus surgical practice in general advanced to greater perfection, and the articular deformities (if I may be permitted to use that expression) were attacked from all sides, the collateral deformities of hip-joint disease still remained untouched, like a "*noli me tangere*," nor shall we be surprised at this state of things if we take into consideration the established supposition, that the caput femoris is luxated, and the power of prejudice in favor of a long established opinion. At about the same time Dr. Buehring of Berlin, the highly gifted nephew of the immortal Dieffenbach, Dr. Loriner of Vienna, and Dr. Bonnet of Lyons, entered into minute researches on the subject in question, and obtained universally the same result, namely, that the former theory of hip-joint disease was fictitious and arbitrary; that the deformities connected with that disease had a dynamical, and by no means an organical foundation, and thus bringing at once, the most distressing mutilation within the reach of surgical aid. Some difficulties, as to the mechanical contrivances, were soon surmounted, and the new discovery put to a practical test. I am happy to state that already

results have been obtained, which leave no doubt as to the efficiency of the new systematic treatment, and I myself can confirm them by my own experience.

The key of the problem having been found, it is not at all difficult to comprehend its nature, as in all diseases of the joints, we have to contend with a train of symptoms entirely depending upon that mysterious function of the spinal cord which we comprehend under the head of reflex action, and which, in spite of numerous experiments, vivisections, and scientific efforts, is still a "*deus ex machinâ.*" That epilepsy, catalepsy, eclampsy, St. Vitus's dance, tetanus, trismus, spasms, and scores of other pathological phenomena, are the visible effects of reflex action, is no longer doubtful; besides, we know a vast number of circumstances under which reflex action occurs, and stimuli that produce them; but still our knowledge, as to the histology and the function of the spinal cord, and its ganglionic appendices, is far from perfect and infallible. We may, however, try to point out some analogies in physiology and pathology, the comparison of which may lead to some conclusions important both to science and practice.

Comparative physiology informs us of the facts, that not only all the organic functions are carried on by the agency of the vesicular nervous substance, the anatomical representative of reflex action, and that the brain has nothing to do with them; but that even the contractions of voluntary muscles, and consequently locomotion, are, to a great extent, dependent on the reflex action of the spinal cord. In a frog, if the spinal cord is divided transversely, and thus the connection with the brain destroyed, we may still excite muscular action by directly or indirectly stimulating the divided portion of the spinal cord. The entire removal of the brain would not alter this fact. In centipedes, the coiled movements of the isolated part of the body will always go on in spite of the resistance of that part of the body which is still in its integrity with the cephalic ganglia. Neuro-pathology furnishes us equally with phenomena corroborating the results of physiology. If an injury has been severe enough to produce the effect of a complete division of the spinal cord, namely, paralysis, the control of the will is lost over the paralyzed parts, and no

sensuous impressions on them are conducted to the brain. As long as the lower segment of the cord remains sound, and the nervous connection with the limbs unimpaired, distinct reflex action may be excited in the limbs by appropriate stimuli.

I met with a case about ten years since, which I deem particularly appropriate to illustrate the foregoing statement. A young man, of about 25 years of age, caught a severe cold while in a state of great heat and perspiration. A few days afterwards he partially lost the control of his lower extremities; in about three months' time his legs were paralyzed, in as far as *voluntary* movement and sensation were concerned; but the limbs were, nevertheless, in a state of tonic spasm, or, so to speak, of tetanus, which extended itself over all the flexors and extensors, adductors and abductors, keeping the extremities as rigid as a rod of iron; the muscles were hard and firm, and for years did not lose their bulk or tone. As soon as the glans penis of the patient, or the large toes, were touched or even pinched, most violent convulsions ensued, which, however, did not last more than a few minutes, and generally subsided with the stimulation.

Thus we have a case where, in all probability, simple exudation and subsequent pressure upon the spinal cord not only isolated the lower portion of that organ from the control of the will and sensation, but became itself a permanent stimulus to the gray substance of the cord, followed by tetanic contractions. Notwithstanding this permanent excitation of the spinal cord, that very reflex action ensued in the shape of convulsion from indirect and minor stimuli. This is only one instance of a very large number of cases on record; in fact, we meet every day with the like, and which become only comprehensible by the full understanding of the reflex functions.

Limited as our knowledge on the subject may be, we are nevertheless fully justified in applying those few facts already established to practical purposes. Reflex action, originating in morbid causes, may be of ephemeral, periodical, or continuous duration, but the prognosis depends by far more on the casual intensity and accessibility, than on its typical appearances. Fortunately, the prognosis of those muscular reflex actions, to which joint diseases commonly give rise, is by no means a

bad one; on the contrary, most, if not all of them, lie within the compass of surgical cure, by means of permanent extension. If we are attacked with muscular cramps in the legs, we force the affected limb into the reverse position, and thus get rid of so painful a muscular contraction. We perceive that those deformities which remain from hip-joint disease, in as far as the afflicted leg is concerned, gradually amend, and the leg, in time, assumes a straight form by the mere weight of that extremity, which acts like an extension. I refer further to numerous cures of contractions of various joints, obtained by the sole agency of permanent extension; and the results of this very treatment in hip-joint disease, already established, leave no doubt as to its efficacy in these and similar cases.

Thus, it appears that we possess in permanent extension a sovereign remedy for overpowering muscular reflex action, and ultimately restoring the greatly distorted form.

The modus operandi of mechanic extension is of course still a mere problem; we know at present only the fact. The question, in reference to the general curability of those deformities, originating from hip-joint disease, may safely be answered in the affirmative.

But it remains yet to be decided, whether permanent extension may effectually be applied to the purpose of preventing those deformities; or, whether it be advisable not to interfere while the disease of the hip-joint is progressing, and to have recourse to it only when that malady has terminated its phases.

Some surgeons will have the orthopædic treatment postponed until the morbid process within the joint is completely terminated; others are in favor of acting immediately. The decision cannot be difficult. It is far better to prevent a deformity than to cure it, especially if there are no contra-indications of immediate extension. The excessive pain has bec[illegible]mentioned as such, and no doubt will set in with injudicious orthopædic treatment. But we have it in our power to avoid it. If in the very beginning of hip-joint disease we place the hip in a firm position, which secures both the rest and extension of the afflicted leg, and the comfort of the patient, as we ought to do, there is no reason why the patient should not be capable of enduring it, provided the mechani-

cal contrivances answer the purpose. On the contrary, the patient will be grateful, as such position saves him the pain, unavoidably caused by accidental movement. In fact, the early use of mechanical treatment has every thing in its favor.

1. It meets the first rule of surgery, by giving the affected limb a quiet position.

2. It counteracts the reflex action, and prevents consequently the deformity.

3. It keeps the caput femoris in the anterior and lower part of the acetabulum, thus preventing any luxation to which circumstances and the extent of caries might tend.

4. It does not cause, but relieves the pain.

But if the patient is already in an advanced stage of the disease, it will be necessary to place him under the full influence of chloroform before the apparatus is applied. In this state reflex action and sensation are arrested. We may with impunity and at once stretch the patient, and give him that position in the instrument which we deem proper. When the effects of the chloroform have passed by, and the patient is returned to consciousness, he will only not complain, but on the contrary will feel greatly relieved, and more comfortable than before. At least I have obtained these results in all cases under my personal care, and there is no reasonable ground why it should be otherwise. To keep the patient in the position once assumed, will suffice to prevent or cure the deformity. Should there however remain a slight deviation, I prefer the repeated use of chloroform and the total restoration of the form under its influence, to the gradual increase of the extension, which is extremely painful.

If, however, the disease of the hip-joint is completely removed, and we have only to contend with a painless muscular retraction, a reflex action of some duration, I prefer the gradual extension to the former, for a sudden extension has not in this case the desired effect, and might bring on a new irritation in the joint, which Dr. Buehring experienced. In point of fact, gradual extension is better calculated to neutralize a long established and powerful reflex action, than the sudden reduction of the deformity.

I need hardly mention, that the proper construction and application of the mechanical contrivances are of great moment, and in truth govern the ultimate result of the treatment. Besides, the greatest care and circumspection on the part of the medical attendant, as well as great patience on the part of the patient, are highly desirable requisites for the consummation of the cure. That the results of the above treatment will be far safer in a hospital, or in the house of a surgeon, is evident.

In the preceding pages I have attempted to delineate the pathological state, and the rational treatment of hip-joint disease (coxarthrocace), and if the deficiency of my knowledge of the English language has not disqualified me, I flatter myself that I have contributed to the better understanding of the proximate cause of that malady; to the more physiological appreciation of its symptoms; to a more correct diagnosis, and more successful and speedier cure. The errors of former times, in regard to hip-joint disease, have been principally occasioned by the want of diagnostic discrimination, and by confounding different complaints under the same head with that affection.

But the limited state of our knowledge on pathological anatomy may be deemed an admissible plea for errors thus committed. Hence we understand why remedies of contrasted properties and actions have been asserted to be most useful agents in cases of supposed hip-joint disease, and methods of various descriptions have been recommended for one and the same object. With the advancement of knowledge all those vague suggestions must necessarily fall to the ground, and give way to rational proceedings; for it is evident, and requiring no further commentary, that an innocent rubefacient, dry or wet cupping, &c., cannot alleviate the process of tuberculosis, the softening and elimination of tuberculous deposits, although they may be valuable remedies in simple coxalgia, or rheumatismus coxæ.

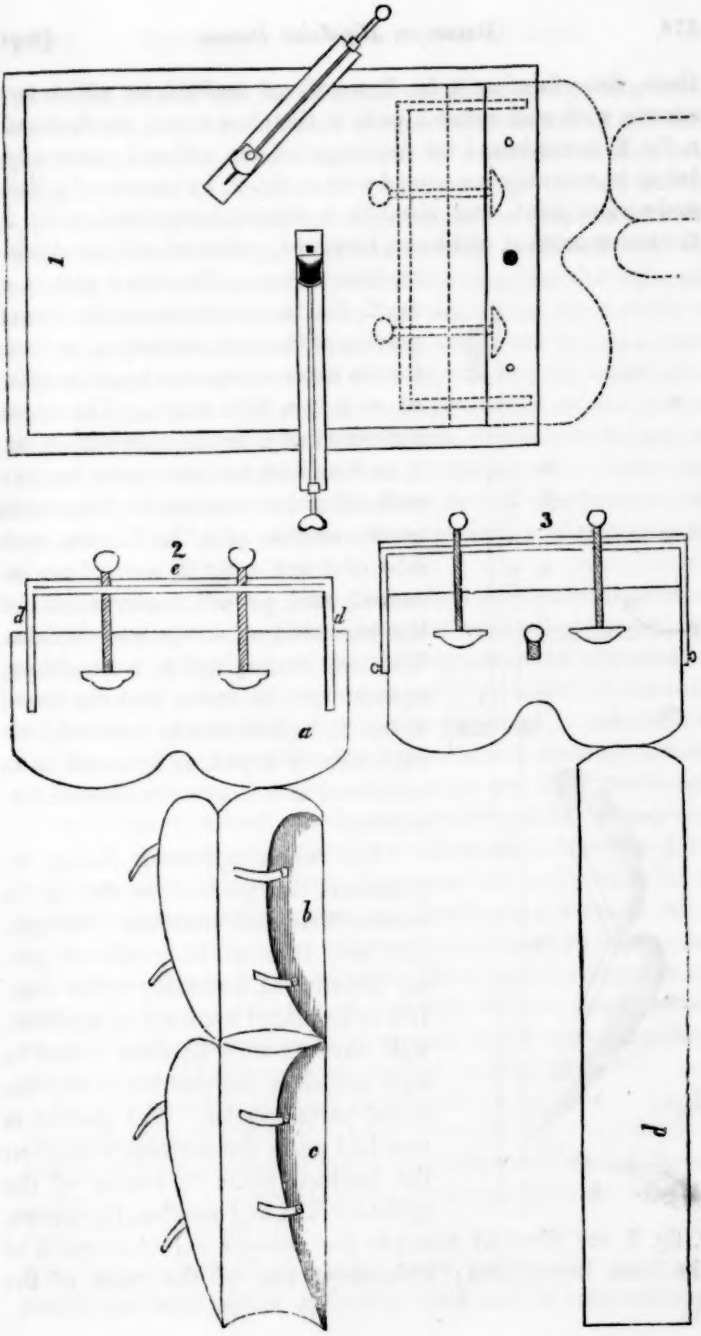
Some medical practitioners entertain a great dislike of mechanical appliances. True enough, mechanical treatment has been very often misapplied, and may have thereby produced greater evils than those against which it was directed; but the misuse cannot prohibit the proper use of mechanical

remedies, from which we may derive great advantage and benefit where all other means have failed in proving successful. Where the mechanical laws and arrangements of the body are disturbed, we can only by mechanical means restore and rearrange them. This is according to rule. It would be just as absurd to treat epilepsy and typhus with mechanical remedies, as wry-neck, club-foot, spinal deformities, the opening of a rupture, &c., with pills and mixtures. In fact, mechanical treatment is becoming gradually more appreciated by the profession. I will merely refer to the modern introduction of compression in cases of aneurism, articular tumors, the ligature of various veins, &c., as having produced most marvellous results. Drs. Buehring, Lorinser, and Bonnet have exerted their ingenuity to construct various apparatus for the ultimate cure of the deformities accompanying and following hip-joint disease. Each of their contrivances has certain merits, although none of them consummate the object intended. Dr. Buehring's apparatus is but of little real value, keeping the patient in a most inconvenient position, which can hardly be endured for any considerable length of time. Dr. Lorinser's is a somewhat modified double inclined plane of Liston; but neither contrivance influences the distorted position of the pelvis.

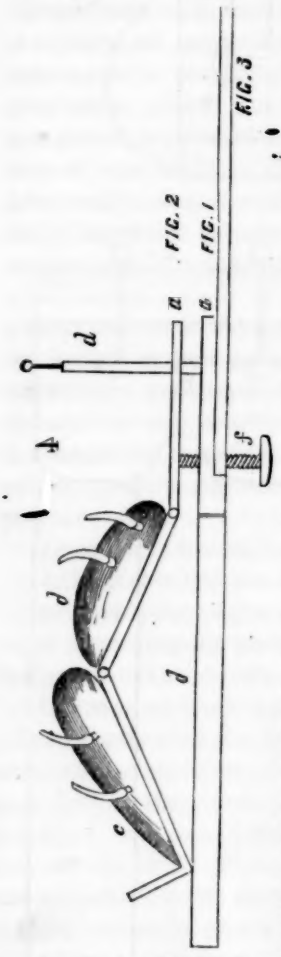
In order to accomplish the following indications—

1. Stretching of the knee and hip-joint,
2. Abduction of the affected limb,
3. Restoring the parallelism of the transversal diameter of the pelvis with the horizon; and
4. Securing comfort and convenience to the patient—

I have constructed the apparatus illustrated by the diagrams annexed. It consists in an upper and lower half, with an iron frame; the lower half is made of two pieces of board, *a b*, fig. 1, and joined together by a hinge, which allows *c* to move to the side. The upper half is likewise made of wood, and consists of three pieces: *a*, fig. 2, is but little larger than *a*, fig. 1; it can be raised by a double screw, *f*, from the latter, and is prevented from turning laterally by two iron poles, *d d*, figs. 1 and 2, being fixed at the lower board and perforating the upper one. Two small iron pieces are joined with


1
2
c
d
d
a
3
b
b
c
p

them, thus forming *e*, fig. 2, a sort of scaffold, on which two screws, with well covered pads at their lower end, are fastened. *c*, fig. 2, is the board for the thigh of the afflicted extremity, being immovably connected with *a*, fig. 2, by means of a ball-and-socket joint, and also, by a simple hinge, with *e*, fig. 2, the movements of which are, however, governed with an Archimedean screw. The third part is, *c*, fig. 2, for the reception of the lower portion of the limb, including the foot; for the latter a separate board is affixed to it in a right angle. The upper extremity of *c*, fig. 2, joins with *b*, fig. 2, as described, and the lower has two rolls affixed to it to render it movable on the surface of *b*, fig. 1. On each side of *b* and *e*, fig. 2, are splints attached, and proper contrivances for the reception of straps and buckles. The iron frame, fig. 3, is an oblong square. At its lower part the board *a*, fig. 1, is immovably fastened; on each side is a pad, so arranged as to be turned as well as to be screwed forwardly.



The whole apparatus, being represented in profile, in fig. 4, is commodious, and portable. For special use, it must be made of proper dimensions, according to the case. It is to be placed upon a firm mattress, well covered with bolsters, raised in such angles as the position of the distorted parts require. The patient is now laid on it, the extremity fixed on the inclined plane by means of the splints, straps, and buckles; the screws, *e*, fig. 2, are directed towards the anterior superior spinis of the ossa innominata; ultimately, one of the pads of the

frame is placed in the lowered axillar cavity, the other against the most convex part of the deformed spine, and thus the patient is placed as firmly and as comfortably as is possible.

The further management of the apparatus depends now entirely on the mode of extension being preferred. If the quicker way is chosen, the patient is put under the influence of chloroform, and, when quite insensible, and the muscles in a state of perfect relaxation, all the screws are turned so as to amend the position and the form of the patient, which is indeed an easy task. Whether it is preferable to do this at once, or by repeated use of chloroform, depends, of course, on the existing circumstances of each particular case. After this operation, the patient is merely kept in the new position, the apparatus thus being only the instrumentality of retaining his form.

If, however, the hip-joint disease has terminated its phases, and the patient be without pain, the gradual extension appears to be preferable. If the description of my apparatus is duly comprehended, the management of it cannot be difficult; but, as the cases of hip-joint disease may vary in reference to deviations of the form, the apparatus should undergo the desired modification. Besides, all attention and care on the part of the surgeon should be devoted to the patient, to relieve him from unnecessary severity, pressure, and other avoidable inconveniences. Thus he will become gradually accustomed to the recumbent position, and will have hope and confidence as to the ultimate result of the treatment. It cannot be denied that the treatment is rather of a tedious kind, both for surgeon and patient; but perseverance and patience will be amply recompensed by the restoration of form and usefulness of the limb, which would otherwise be doomed to be crippled.

543 *Atlantic street, Brooklyn, August*, 1853.

ART. II.—*Case of Impacted Fracture of the Humerus.* By J. P BATCHELDER, M. D., with a woodcut. [A paper read before the New-York Medical Association.]

MR. ———, aged 47 years, fell down a flight of stairs, and struck the right elbow upon the floor, and the shoulder, or

rather arm of the same side, just below the joint, with great violence against the sharp corner of the moulding at the recess of a window. When I saw him, thirty-six hours after the accident, there were marks of severe contusion, with considerable extravasation of blood. The suggilation occupied nearly the whole middle, and part of the upper third of the arm. The shoulder and arm were much swelled—the latter hung parallel with the side, but could be moved by the patient himself, backward and forward, with tolerable ease, and likewise separated some distance from the body, and with little assistance raised to a level with the acromion; the hand, in like manner, could be applied to any part of the head without occasioning much uneasiness. The breadth of the shoulder, particularly forward, was considerably increased—posteriorly, there was a depression beneath the acromion, and from the middle of that process, a groove or sulcus, extending some two or three inches down the arm, was perceptible to the touch. The head of the humerus, or part of it which followed, rather imperfectly, the movements of the shaft, seemed to occupy a space nearer the coracoid process than natural. There was an obscure, undefined crepitus:—although no swelling or rough surface could be felt in the axilla, either a fracture through the anatomical neck of the bone, which had separated the head from the body, or detached the larger from the lesser tuberosity, was suspected; but on close examination it was thought the groove or sulcus, and prominence spoken of, and regarded as signs of the latter, were occasioned by the tumefaction of the anterior portion of the deltoid muscle, upon which a considerable part of the violence which caused the injury had been expended. Upon the whole, the contour of the shoulder did not appear to be more altered than what was fairly attributable to this tumefaction; and, all things considered, the pain and tenderness were less than could have been expected. Albeit the arm was a little shortened, yet there was clearly no dislocation; and when the existence of a fracture was suggested, the patient stoutly denied its possibility, and in support of his opinion moved the limb with a freedom and facility, that seemed to be utterly at variance with such a supposition. That a fracture, however, did exist, was

not doubted, and from the very circumstance which convinced the patient that the diagnosis was erroneous, the inference was drawn that it was an impacted fracture—a species of fracture which occurs more rarely in the vicinity of the shoulder than in the neighborhood of the hip. In this kind of injury, wherever situated, the interlocking of the broken extremities maintains a sort of continuity of the bone (imperfect it is true), which enables the patient to perform such a degree and extent of motion with the limb, as would seem to be incompatible with the existence of a fracture. Hence the precise nature of the accident is not unfrequently misapprehended, and from the prominence of the acromion, the hollow beneath it, and the difficulty of detecting the crepitus, it is liable to be, and is, indeed, too often mistaken for a dislocation of the humerus—a mistake which arises mainly from the surgeon not knowing exactly how to detect the crepitus, which he may generally do with one hand grasping the head of the bone firmly, and holding it fast, and the other laid over the seat of injury, while an assistant rotates the fore-arm and elbow. In this way the crepitus, though very obscure, will almost always be felt.

In the ordinary fracture through the neck of the humerus, by which the head is separated from the body, the upper end of the shaft is drawn down by the action of the pectoralis major, latissimus dorsi and teres major, into the axilla, where it can be commonly felt, which, taken in connection with the other circumstances or symptoms just detailed, affords an additional reason why this injury is so apt to be mistaken for a dislocation. Until this part is raised to its normal position, (which is easily done), the crepitus is not readily perceived; and even then not always clearly, unless, as suggested, the head of the bone is held fast, and the arm rotated.

There is another variety of fracture, near the upper end of the humerus, which is sometimes mistaken for a separation of the head from the shaft through the epiphysis. This mistake is owing to the fact that the epiphysis is generally supposed to be high up, in or near the groove, which, constituting the anatomical neck, joins the head covered with its cartilage, to the body of the bone; whereas the tuberosities are situated below the anatomical neck, and wholly above the epiphysis;

in fact between it and them. [Sir Astley Cooper tells us that, "The humerus is sometimes broken just below its tubercles through its cervix." "I have seen," continues he, "this accident happen both in young and old persons, but rarely occurs in middle age. In the young it happens at the junction of the epiphysis where the cartilage is situated, and in the old it arises from the greater softness of this part of the bone. In this accident the head of the bone remains in its place, but the body of the humerus sinks into the axilla, where its extremity can be felt." He also relates a case in which it was found on examination after death, that—"The capsular ligament was extensively lacerated, the humerus was fractured through the cervix, also obliquely through the head, and a small spicula of bone was separated from the cervix."]

In the adult, the epiphysis is a little more than an inch below the upper edge of the greater, and three-fourths of an inch below that of the lesser tuberosity; and in the humerus of a child some nine or ten years old, the epiphysis is three-fourths of an inch, lacking one-tenth of a line, below the upper edge of the larger, and just half an inch below that of the lesser tubercle. The kind of injury now under consideration, is not through the epiphysis, but through the tuberosities, between the epiphysis and the inferior margin of the groove above-mentioned. It is not impacted, and occurs both in middle and advanced age. In such persons it is a real fracture, and not a separation at the epiphysis, as in the young. I have oftener seen it in advanced than in middle life—probably for the reason assigned by Sir Astley—"the greater softness of this part of the bone;" whereas, the true separation at the epiphysis has presented itself to me in the young only,—*i. e.*, in persons under twelve or fifteen years of age.

From the accompanying drawing it is obvious that the epiphysis on the tubercular side of the bone is an inch below the upper margin of the greater tuberosity; and the direction which it takes is inward and upward, directly through the part where the body and head covered with its cartilage are united; consequently, there may be a fracture through the tuberosities on the external side of the bone, and likewise through the epiphysis on its its internal side. [This view of the subject helps

to explain the nature of the case mentioned in the Surgical Dictionary. "C. Larbaud showed Bichat the humerus of a young man, aet. 17, the head of which was *accurately detached* from its body, by a fracture, which had passed obliquely through the upper part of the tuberosities."]

This obliquity in the direction of the epiphysis, furnishes another reason why a fracture of this character in the adult, or a separation at the epiphysis in the young, is liable to be mistaken for a dislocation; because the inner margin of the upper end of the detached shaft feels through the soft parts in the axilla, somewhat like the head of the bone, and suggests the idea of a dislocation.

Besides, the obtusely rounded extremity of the shaft is sometimes in this form of accident, drawn downward and forward, near the coracoid process, where it is felt, following the movements of the humerus, and is taken for the head of that bone; consequently, a dislocation in this direction is immediately inferred; which mistaken inference may, however, be corrected by the facility with which this end of the fragment is made to leave its abnormal and resume its normal position, when a crepitus can be perceived by rotating the limb.

I well remember the first case of the kind which came under my own observation. It occurred in the person of an old man of 80, who in falling pitched upon his shoulder. A surgeon was called, who pronounced it a dislocation, and pro-

ceeded forthwith to the reduction, in effecting which little difficulty was experienced, but as soon as the extending force was withdrawn, the displacement recurred. The trial was repeated again and again, with the same result, when the case was finally abandoned, as one of an extraordinary nature. Two days after, I visited the patient, and found the shoulder much tumefied and inflamed. The arm was directed a little backward, and the elbow separated a small distance from the side, with which it could be easily brought into contact. With slight assistance it could be moved in different directions, but the power of voluntary motion was lost. When the swelling and inflammation had subsided, the superior extremity of the lower fragment could be distinctly felt, forward and downward, below the coracoid process, from which it could be easily removed and brought to its normal position, when the crepitus could be produced. A good cure was ultimately effected.

In many cases of injury of the joints, particularly the shoulder and hip, when much difficulty is experienced in arriving at a correct diagnosis, the surgeon will sometimes find it profitable to revert to first principles, and inquire what functions the osseous structures involved are in their healthy state destined to perform; when it will recur to him that the long bones are levers, which preserve the length and direction of limbs, and upon which the mechanical powers of the system exert their influence. As such, regard must be had to the contingencies which render them effective, viz, the fulcrum, the power, and the weight.

In the shoulder, the connection of the scapula with the clavicle constitutes a common centre of motion, a *point d'appui*, which is the basis of all movements participated in or performed exclusively by the parts directly entering into it. The shoulder joint intervening, the humerus can moreover be made to perform many and various motions, without causing any movement of the scapula or clavicle, but not so when a luxation exists—then the head of the humerus finds a new lodgment, and a new fulcrum, and the limb can neither perform nor be made to perform its accustomed motions.

If it (the head) be lodged against any part of the scapula,

the inferior costa for instance, as in luxations into the axilla—and power be applied to the lower end of the bone, a lever of the first kind will be formed, and the force transmitted to the scapula will cause it to move on the before-mentioned common centre, the reality and extent of which movement may be readily ascertained by placing the fingers on its inferior angle, and noting the extent through which it passes when the limb is made to perform motions which it ought, in the normal state, to do without at all disturbing the scapula. In this case, the leverage and the corresponding power produce marked and distinctive results, but in a fracture of the humerus, which destroys it as a lever, this power is lost, and no such results are obtained, or obtainable.

In dislocations of the shoulder, this expedient is generally less available and important than in those of the thigh, but in the former, especially when there is much swelling and soreness, it becomes more worthy of consideration, from the fact that the inferior angle of the scapula is at some distance from the immediate seat of the injury, and therefore, it may be resorted to without much increasing the suffering of the patient.

In dislocations of the hip, the femur is instantly converted into a lever of the first kind; by the agency of which, when the thigh is acted upon, a bend of the spine, in the lumbar region, is produced, which is best observed by laying the patient upon a horizontal plane, with the injured limb in contact with its surface. If the limb be now elevated to an angle of 45°, the bend, which is somewhat angular, immediately disappears and the spine becomes parallel to and in contact with that surface. Now let the limb be again depressed and brought in contact with the plane, and the spine rises, and the angle is manifest, and the same results will follow as often as the experiment is repeated; but no such phenomena will be exhibited if there is a fracture in the femur, which, as in the humerus, destroys the leverage.

When the femur is luxated, the fulcrum is at the insertion of the iliacus internus and psoas magnus muscles; the weight of the limb or force applied to the knee constitutes the power; and the portion of the spine to be elevated, the weight; in consequence of which the evidence furnished by this expedi-

ent is most remarkable, and conclusive in dislocations upward and backward upon the dorsum ilii; but it is believed that it will be found sufficiently characteristic in all the different species of luxations happening to this important joint; such indeed has been the fact in all the cases I have witnessed, and I have repeatedly seen them in every variety of form, with the exception of that in which the head of the bone has passed forward and upwards on the body of the pubis.

A caution in one respect is to be kept in mind; for the same results are exhibited in cases of fracture of the cervix femoris, of long standing, in which the trochanter major is drawn up and anchylosed, and fixed upon the dorsum ilii. If there is no mistake in the premises laid down, this might be expected, and we have never failed to find it. The hip-joint is destroyed, but a compensating joint is formed in the spine, which enables the patient to walk well (except for the shortening of the limb), so far as motion is concerned, and sit with tolerable grace, without giving rise to the suspicion of any derangement of the parts constituting this articulation.

In ascertaining the existence, and diagnosing dislocations and fractures, the surgeon will of course take into consideration the other points—(length and direction)—which relate to the functions of the bones.

ART. III.—*Some Remarks on Small-Pox, Varioloid and Varicella, as connected with their Diagnosis.* By CHARLES A. LEE, M. D., Professor of Materia Medica, and Pathology, in Geneva Medical College, etc., etc.

IN the July No. of the *American Journal of the Medical Sciences* (1853), I gave some account of a varioloid disease, which has recently prevailed to a considerable extent, in the townships of Gorham and Phelps, Ontario county, State of New-York. In that article I gave a pretty minute description, from careful personal observation of the phenomena; particularly the character of the eruption, in different cases, showing that, in many instances, the eruption bore all the distinguishing marks of varicella, as well as purpura, pemphigus, pompholyx, and even erysipelas; so that some expe-

rienced physicians were so confident that the disease was *chicken-pox*, that they staked their professional reputation on the issue, and refused to advise vaccination or re-vaccination in cases where persons were liable to exposure. Even after well marked cases of *small-pox* appeared, which were distinctly traceable to the same infection (and all the cases could be traced to the same source), some still persisted that the previous cases were *chicken-pox*, and that *these* were only more aggravated cases of the same disease.

From what I have observed, I am inclined to believe that this mistake is constantly being made, at least in our cities, and that is one reason why small-pox is an endemic in such places; the virus being constantly disseminated in some of its milder forms of *varioloid*, which are mistaken for *varicella*. I have myself known this mistake made in repeated instances; and there is the greater danger of making it in large cities, inasmuch as it is often impossible to trace the infection, as in the country, to its original source. One medical gentleman, of Gorham, a most respectable practitioner of some 40 years' standing, who has treated many cases of small-pox, and had charge of a small-pox hospital, still insists, I believe, that the disease of which I gave some account, was *varicella*, although, he admits, if I am not mistaken, that small-pox prevailed at the same time. But inasmuch as every case could be traced directly to a Mr. *McComb*, who brought the disease from Rochester, they must all be regarded as the same disease, although their distinctive characters, in different cases, were exceedingly variant:—a somewhat further consideration of these diseases, may perhaps be useful.

Hufeland describes chicken-pox under the name of "*variola spuria*," and remarks, under the head of diagnosis, that the pustules are sometimes small and *perfectly similar to small-pox*, sometimes found only on single parts, and sometimes every where. They break out after a febrile commotion of 24 hours, which is, in some cases, very slight and scarcely perceptible, and *in others violent*, and increases to delirium. Some pustules form within the first 24 hours, and dry up in 24 hours more; but a few single pustules will continue to suppurate for a longer time." "The distinction," continues Hufeland, "between this

and genuine small-pox, therefore, consists *neither in the form*, nor in the fever, which sometimes is very slight in the genuine and violent in the spurious, according to variety of constitution; but merely in the quickness of its course. In the genuine variolous disease, there are three days of fever before the eruption; in the spurious, only one day; in the genuine there are three days for suppuration; in the spurious, one day; the same proportion for exsiccation, so that the genuine small-pox completes its course within nine or twelve days—the spurious, within three or four days. Life is never endangered by this disease."* The above marks are too often lost sight of; had they been noticed, the disease would probably not have been mistaken for varicella. In no case did the eruption appear on the second day, so far as I could learn, and when it did appear, it came out generally in successive crops, assuming a great variety of forms: as *varicella*, *pemphigus*, *small-pox*, *purpura*, *swine-pock*, *horn-pock*, &c., &c. There is much truth in the remark of Dr. Mason Good, that, "perhaps, there is no exanthem that is so much affected by accidental influences as the small-pox;" and he further observes, that these "diversities, or aberrations of small-pox, more commonly approximate the form and general character of pemphigus, or varicella (chicken-pox), and have, no doubt, often been mistaken one for the other, especially the latter, of which the severe variolous epidemics, that have of late years spread over Edinburgh, and other parts of Scotland, as well as over many parts of the Continent, afford striking examples,"† &c.

An anomaly was observed in several instances in the disease, as it prevailed at Gorham, which served still more to render the diagnosis difficult—and that was, individuals who had not been vaccinated, *had the disease* in a very mild form, indeed, no one could distinguish them from varicella. This, however, has been noticed in other similar epidemics. Thus Dr. Mallock, in a letter to Dr. Thomson, of Edinburgh, makes the following statement:—"No case of small-pox had occurred in this town for nine years, till last winter, when an idle

* Prac. of Medicine. By C. W. HUFELAND. Am. Ed., p. 395.
† Study of Medicine, vol. 1, p. 625, Am. Ed.

boy, who was in the habit of wandering about the country, frequenting markets, &c., happened to be at a house, where some of the inmates were said to be ill of small-pox. He himself had been vaccinated some years before. On his return home he was seized with febrile symptoms, and confined for two or three days in bed, *when an eruption similar to chicken-pox* made its appearance. Immediately the fever abated, and in a few days more he left his bed, and attended a cattle-market, half a mile distance from the town, without experiencing any bad consequences. About a week afterwards, one of his master's children was taken ill, and went through the regular stages of small-pox in a mild manner; then a second similarly; a third suffered in a very alarming degree, from the confluent kind; a fourth rather worse than the two first, and the youngest, of eight months old, had what, if the other cases had not occurred, *I would, without hesitation, have called chicken-pox;* for there was little or no fever, and the pustules were filled with a watery fluid, which was not converted into the purulent appearance of small-pox. None of these children had undergone vaccination." *

The same thing occurred repeatedly in Gorham, even in the same family; some, who had not been vaccinated, having the disease in the mild varicelloid form, while others, who had been vaccinated, had a pretty severe varioloid attack. But as a general rule, those who had been vaccinated, had a milder form of the disease than those who had not. It is a very great mistake to suppose that in all cases of small-pox, or varioloid, the pustules must contain pus, or even a milky, sero–purulent fluid. They may, as in varicella, contain limpid serum, and differ in no respect from the eruption of chicken-pox. In perhaps one-half the cases, the fluid was thin, and whey-like in aspect, whether the fever and constitutional symptoms were mild or severe. Sometimes the eruption was at first *papular*, then became *vesicular;* either conical, or having a depressed point in the centre, with pellucid lymph in the early stages, gradually becoming milky, and when matured, containing the same whey-like matter, but rarely assuming that thick con-

* Thomson, Variol. Epidem. p. 333.

sistence and yellow color, which usually occurs in true small-pox, and this, too, whether preceded by vaccination or not. The number of vesicles varied from five or six, or even none at all, although constitutional symptoms were present. It would be wrong, however, to infer, that the controlling power of the vaccine disease was not exhibited in this epidemic, for, as a general rule, the eruption was of a more varicelloid form, and the constitutional symptoms much milder in cases where vaccination had previously been performed; though there were some striking and remarkable exceptions to this. For the most part appearing on the third, they reached their size by the fourth day after their appearance, and were speedily followed by desquamation, to be succeeded by other crops, some of which were drying and scaling off, as others were making their appearance.

There were instances, too, where, as in cases described by Thomson and Marshall,* the skin assumed a measly appearance, the surface of the body resembling wet brown, or wrapping paper, and in one instance, where the eruption was confluent, Drs. Potter and Dean were inclined to regard the case, which proved fatal, as one of erysipelas; the whole body presenting a bright efflorescence, but without any effused fluid. In other cases, the vesicles contained air, and in one case, blood was extensively effused in spots and patches beneath the entire lower extremities. This case recovered, and what was remarkable, there was but slight fever, or constitutional disturbance; abscesses too, formed in some instances, toward the close of the disease, filled with bloody ichor or pus seated on different parts of the body, and which proved exceedingly obstinate and annoying. Every one acquainted with the history of small-pox knows that the different forms which the eruption assumes have led to many controversies; the measles, plague and chicken-pox, &c., all having been believed to be varieties of small-pox. This controversy, with regard to the identity of chicken-pox and small-pox, which had raged for several centuries, appeared to be almost settled in

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* *Account of the Introduction of Vaccination*, &c., in Ceylon, &c. (1819.) By Henry Marshall, M. D.

the negative, when the work of Professor Thomson, of Edinburgh, appeared in 1820, to revive the dispute, and furnish still further evidence in favor of the identity of the two diseases; and what served still further to confound them, the lymphatic small-pox was called chicken-pox, to distinguish it from the purulent variety, by Harvey, Mead, Morton, and others; while *varicella* or *water-pox*, in all its forms, was called *variola*, though the term *spurious* or *bastard*, was generally prefixed. Professor Frank, about half a century since, undertook to show that *chicken-pox*, *horn-pox*, and all those diseases, which have been called *varioloid* diseases, as well as *pompholyx*, belong to *pemphigus*, as a genus, of which there are two species, *amplior* and *variolodes*. Heberden and Willan entertained more correct notions, and tried to discriminate between the two diseases, which they did to the satisfaction of the great body of the profession, down to the publication of Professor Thomson's work in 1820, and even now, in this country, few, perhaps, can be found who would contend for the identity of *variola* and *varicella*. The phenomena I have described, as connected with the varioloid epidemic at Gorham, have been observed in other instances, as in Scotland, for a series of years, as described by Thomson* and others; also at Montpelier, in France, in 1816, where, according to Professor Berard, the eruption presented all the forms which were observed at Gorham, whether as respects the shape and number of pustules, the nature of their fluid, the length of time required for exsiccation and desquamation, the duration and severity of the eruption, as well as in the absence or presence of the secondary fever. It was the opinion of some physicians at Gorham, as at Montpelier, that the chicken-pox preceded and accompanied the genuine variola; while the two were often so blended, that it was difficult, if not impossible, to draw the line of demarcation. I might, with propriety, use the same language in reference to the disease, as Berard employs: "*Never, perhaps, did the symptoms of chicken-pox so nearly resemble those of the small-pox, nor these diseases more fully assume the characters of each other.*" At the commencement

* *Loc. Cit.*

of the epidemic, Professor B. regarded the two diseases as perfectly distinct, but running a common race; but at length he was inclined to consider them as identical; thus making small-pox and varicella the same disease, making the same mistake as was made by Professor Thomson, and is still made by many, from not knowing that in some modified cases of variola, whether that modification be produced by vaccination or other causes, the eruption takes on a great variety of forms, simulating not only varicella, but also other eruptive diseases. Indeed, it would not be difficult to show, if we admit what has been contended for by Thomson, Berard, Willan, Ashby Smith, Frank, Heberden, and others, that small-pox, plague, chicken-pox, pemphigus, pompholyx, kine-pock, grease-pox, measles, and scarlet fever, are all modifications of the same disease, and derivable from one common virus.

During a dispensary practice of several years, I was in the constant habit of seeing what was called by myself, and others, chicken-pox, but which I am now satisfied was small-pox. In the same family, I have attended cases of confluent small-pox of the most malignant type, while others had what usually goes under the name of *varioloid*, and others still had varicella; that is, "an eruption over the body of semi-transparent glabose vesicles, with red margins accompanying a slight attack of fever, seldom passing into suppuration; but on the third day, bursting at their tips, concreting into small puckered scabs, and leaving no cicatrices." *

Precisely what Cazenave has observed with regard to certain eruptive diseases in Paris, "the same cause, viz., variolous infection, seemed to develope these several eruptions, which were observed in the same quarters, in the same streets, in the same houses. When the disease made its appearance among a numerous family, some had small-pox, some modified small-pox, and others chicken-pox. One circumstance was striking to every one, viz., the mildness of the disease in those persons who had been vaccinated, and in the majority of those who had already had variola." I cannot agree with Dr. Copland, in believing that such facts as these favor the

* Copland, *Dict. of Med.*

opinion of Dr. Thomson, that chicken-pox and small-pox are the same disease; on the contrary, I am led to the conviction that, in one form of modified small-pox, the eruption is strictly vesicular, and has the above characters of variola, so as not to be distinguished from it by the character of the vesicles alone.

The following points, however, are to be observed:

1*st.* That true varicella is not transmitted by inoculation, and never produces variola; while the matter of small-pox always produces smallpox by inoculation. The matter of varicella, when inserted beneath the cuticle, may cause local irritation and redness, and in some cases, a vesicle, which may go through its ordinary stages, but without any, or slight constitutional disturbance.

2*d.* Where chicken-pox has been regarded as contagious, it has been confounded with modified small-pox.

3*d.* Varicelloid variola, as well as true varicella, may appear in persons who have not been vaccinated, as well as those that have been, although, as a general rule, the former occurs only in those who have been protected by kine-pock, or by a previous attack of small-pox.

4*th.* Vaccination will pursue its usual regular course when practised shortly after an attack of true *varicella*, which never happens when vaccination follows true variola.

5*th.* The progress of true varicella is uniformly the same, whether it occurs before or after vaccination, or after variola.

6*th.* As true varicella may prevail as an epidemic without any admixture of varioloid eruptions, or variola, so may variola prevail without the varioloid variety; although, at certain seasons, and in some localities, from the operation of certain unknown causes, variola may give rise to a great variety of eruptions, simulating, in fact, a number of cutaneous diseases hitherto regarded as specifically distinct, as varicella, pemphigus, purpura, pompholyx, erysipelas, &c.

7*th.* The eruption in variolous cases occurs on the third day; in true varicella, on the second day.

8*th.* True varicella includes different varieties of eruptions, consisting of vesicles, or very imperfect pustules, which maturate and decline in 3, 4, or 5 days, characterized by slight

antecedent fever, and occurring chiefly in infancy and childhood, occasionally in adult age, and at times as an epidemic.

9th. These varieties have been called small-pox, chicken-pox, and hives, corresponding to the forms described by Willan and Bateman. *1st. Varicella lentiformis; 2d. V. coniformis; 3d. V. globularis;* to which may be added a fourth variety, the *V. corymbosa* of Gaad—the confluent chicken-pox.

10th. These varieties may be readily distinguished by the following characteristics, which I chiefly take from Copland.

In the first variety (lenticular), small red protuberances appear on the first day, of an irregularly circular form, with almost a flat and shining surface, in the centre of which a transparent vesicle is soon formed; a whitish lymph fills the vesicle on the second day, which is about one-tenth of an inch in diameter; the lymph is straw-colored on the third day; and, on the fourth, the vesicles which have not been broken subside, and are puckered at their margins; few are entire on the fifth day; and, on the sixth, small brown scales appear in place of the vesicles, becoming yellowish on the seventh or eighth, gradually drying from the circumference to the centre; falling off on the ninth and tenth days, leaving, for a time, red marks on the skin, without depression. The disease, however, may be protracted several days, owing to successive crops of vesicles making their appearance. The eruption appears *first on the back and breast*, is usually distinct, and general over the body. No cicatrices are left, even when the vesicles suppurate. (The eruption of variola appears first on the face, neck, and hands.)

In the second variety (*conoidal*), the vesicles are acuminated on the first day, and contain transparent lymph, having a somewhat hard and slightly inflamed base. On the second day, they are a little larger, bases more inflamed, and the lymph, in many of them, of a light straw color. The vesicles are shrivelled on the third day, and the lymph of those broken is concreted into slight gummy scabs. Such as remain whole, and have their bases much inflamed, contain, on the third day, a whitish puriform fluid; *every vesicle of this kind leaving, after scabbing*, a durable cicatrix. On the fourth day, thin, dark-brown scabs are seen, intermixed with others which are

rounded, yellowish, and semi-transparent, and then gradually dry, separate, and fall off in four or five days. The whole duration of the eruptive stage, in this variety of the disease, is six days, owing to a fresh eruption of vesicles usually taking place on the second or third day, which has a similar course to the preceding; minute red tubercles appear in some cases, and subside without forming vesicles. The scales last formed are generally not separated till the eleventh or twelfth day, when slight ulceration takes place in vesicles from which the scabs have fallen off, which is apt to take place where the febrile symptoms have been severe. Depressions or cicatrices may remain, but this only in parts subjected to pressure.

In the third variety (*globular*), the vesicles are large and globular, the base not quite circular; they are surrounded by inflammation, and contain a transparent lymph, which is slightly turbid, and resembles milk whey, on the second day of the eruption. They subside on the third day, and become shrivelled, as in the former varieties, and appear yellowish from their being mixed with the lymph. Before the end of the fourth day, the cuticle separates, and thin, dark scabs cover the base of the vesicles. The scabs dry and fall off in four or five days afterwards.

11*th*. The reader must have noticed in the above descriptions, some of the forms of varioloid eruptions, as they usually occur, particularly in the second and third varieties; but, as a general rule, the vesicle, full of serum at its apex on the first day of the eruption; their irregular form, and early abrasion; the shrivelled state of those that remain entire on the third and fourth days, and the general appearance of small scabs on the fifth day, when small-pox pustules are not at the height of their suppuration, will usually enable the practitioner to form a correct diagnosis. I am satisfied, too, that the mark laid down by Willan is a very important one, namely, that variolous pustules are, on the first and second day, small, *hard*, globular, red, and painful, imparting the sensation, when the finger is passed over them, similar to that which one might conceive would be excited by the pressure of small round seeds under the cuticle. In varicella, as Copland has remarked, almost every vesicle has, on the first day, a hard, inflamed

margin; but the sensation communicated to the finger is like that from a round seed flattened by pressure. But I can by no means subscribe to the truth of the following remark, which immediately follows:—"When the globular vesicles, or hives, appear, as is sometimes the case, intermixed with the lenticular or conoidal eruption, they afford a ready distinction from the small-pox, to the pustules of which they have little resemblance." I have, however seen both these forms of eruption proceed from variolous infection, not only in the epidemic as it prevailed in Gorham, but also in the city of New-York and other places.

12*th.* There can be no doubt that the precursory symptoms of modified small-pox are usually more intense than those of varicella, though there are some notable exceptions to this, as at Gorham, where many persons, attacked with the disease, retained their appetite for food, and their usual strength, keeping about their ordinary business, and saying they never felt better, even when the body was sprinkled with a considerable number of well-developed pock; while I have often known true varicella preceded and attended by considerable depression, anorexia, and chills, followed by high fever, pain in the head and back, thirst, and other constitutional symptoms.

13*th.* Dr. Copland also states that, in modified variola, the eruption is *pustulent*, and the pustules are small, circular, and generally depressed in the centre; and, after the scaly crusts drop off, tubercles are frequently seen, which disappear but slowly; while, in varicella, the vesicles, which are at first transparent, contain a fluid which becomes sero-purulent; and they are never followed by tubercles, as in modified variola. We have seen that there are exceptions to the distinctions here pointed out, though they will doubtless generally hold. All will agree with him in the opinion that varicella is not infectious.

14*th.* There is one mark of true varicella, quite characteristic, but not often pointed out, which relates to the form, &c., of the crusts. In varicella these are irregular, uneven, opaque, of a pale brownish or yellowish color, formed of lymph and collapsed cuticle, and falling off, not in a single piece like the

crusts of variola, but in small fragments.* Professor Thomson, it seems, never saw chicken-pox prevailing, unless intermingled with small-pox at the same time; while nothing is more common, at the present day, than to see chicken-pox prevailing as an epidemic, without any cases of small-pox whatever. This, were there no other test, would be ample, as diagnostic of true varicella.

15*th.* Again, while an attack of natural small-pox protects the system, as a general rule, against a recurrence of small-pox, and an attack of chicken-pox against the recurrence of that disease, neither of these affords the slightest security against the other. This proves the intrinsic qualities of each virus to be distinct.

16*th.* I have now known four instances where an eruptive disease, appearing in different parts of the country, has been pronounced, by experienced physicians, chicken-pox; but which, after the disease had extended, and the virus diffused far and wide, proved to be small-pox, several cases terminating fatally. This shows the necessity of physicians being on their guard, and of making themselves thoroughly acquainted with the real characteristics of the disease, if there are any, so that such mistakes may be avoided.

17*th.* Where doubt exists, we should go on the supposition that the disease is variola, subjecting those exposed, to vaccination, and taking all necessary precautions for preventing the spread of the infection.

ART. IV.—*Remarks on the Effects of Sleep, in exhausted states of the System:* (read before the Medical Society of Oneida county, New York.) By JOHN McCALL, M. D., of Utica, Fellow of the College of Physicians and Surgeons of the University of New-York, Member of the American Medical Association, etc., etc.

I PROPOSE making a few remarks on the present occasion, respecting certain views and practices which have obtained to some extent among physicians, of not allowing such patients as are regarded as much exhausted, from whatever cause, to

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* *Ed. Med. & Surg. Jour.* Ap. 1820, and Jan. 1828.

sleep but a few minutes at a time, from an idea, as they express it, that sleep beyond fifteen or twenty minutes at a time, would exhaust and prostrate the vital forces. That such opinions have been entertained by some of our members, I know, and if nurses and other attendants upon the sick are to be relied on in all cases, it is to be feared that they are still put in practice by some of the profession. At least, I have been credibly informed, that in different parts of our country, some physicians still give directions to the nurses to wake up patients who are in a very feeble state, every few minutes, though they may be sleeping soundly at the time.

Several years since, I was called in consultation in a severe case of bilious fever, occurring in the fall season. The patient was a young man in single life, who had been sick some two weeks, and was in danger of having a typhoid form of the disease; he was so reduced in strength at the time as to faint on being raised from his bed. On my second visit, which was in the morning, I inquired of the attendant how the patient had slept during the preceding night? She replied "pretty well," but remarked that she awoke him every fifteen or twenty minutes. With some surprise, I asked by what authority she had done so; and learned that it was according to the directions of the attending physician, and upon further inquiry, I found that such had been the practice enjoined upon the nurse for several days. Regarding such advice as not only singular, but pernicious, I took occasion in the presence of the medical attendant to urge upon the nurse and family the danger of such practice, and advised that the patient be allowed to sleep as long as he wished, even three hours at a time if he could, and that on no occasion should he be again disturbed in like manner. From this time he was permitted to sleep as long as he desired, and often from one to three hours without waking. With careful nursing, strict attention to ventilation and cleanliness, and a mild, supporting course of treatment, our patient gradually recovered, though his convalescence was slow, and it was not until the approach of the cold weather of winter that he fully regained his strength and health.

In another instance, where I was called in consultation, the

same course had been pursued. The patient was a young lad about eleven years of age, the son of a clergyman, suffering an attack of inflammation of the bowels. He was naturally feeble, and easily prostrated, had been ill six days when I first saw him, and by accident I learned that the nurse and watchers, by direction of the medical attendant, had made it a rule to wake him every few minutes. He was petulant, "nervous," as it is called, and easily disturbed by trifling things; his pulse was very frequent, varying from 120 to 140 in the minute, small and feeble, and he was irritated and annoyed by almost every thing said or done to him. He was now told and enjoined to sleep as long as he wished, and the nurse was forbidden to wake him, even though he should "sleep hard," to use their own words. "Tired nature's sweet restorer, balmy sleep," was now allowed to do her work "in her dire way," and with the aid of suitable anodynes and soothing remedies, the young patient slowly recovered.

In proof that one or more of our profession in distant States or sections of the country entertain like views, and pursue similar treatment, if such a term is admissible, I may mention the case of a merchant from Michigan, who became a patient of mine while suffering a severe inflammation of the middle finger of the left hand, occasioned by a slight wound received from the point of a needle near the first joint. This gentleman's constitution was a good deal impaired, in consequence of a severe course of fever which he had passed through in the preceding fall or winter. In the relation of his illness to me, he stated that by the advice of the physician who attended him, he was not allowed to sleep but a few minutes at a time. On my third visit, I learned that his good young wife had made it a rule to wake him every fifteen or twenty minutes, assuring me that his medical attendant in Michigan had advised this practice. The patient was now told to sleep all night if he could, and his wife respectfully requested to do the same, and thus give herself no further solicitude about his "sleeping too hard." From this time he was allowed and enabled to rest quite comfortably by taking one or two small Dover's powders in the evening. He is now fully convinced that sleep, even if "hard," is nature's best restorer.

How prevalent these opinions may be, I am unable to say, but I fear there are still a few of the medical profession who entertain them, and it is very certain that in this region such notions too generally obtain among nurses and attendants upon the sick. My object in presenting the subject is to solicit attention thereto, and at the same time to ascertain, if possible, whether such practice is ever advisable in the class of patients above mentioned.

Having never seen or heard any good reason given in support of such opinions and practice, and being unable to reconcile either with any experience of my own touching the physiological and pathological view of the case, I trust I shall be excused in thus briefly discussing the subject. And in order to find out the truth here as elsewhere (which, by the by, is often a difficult matter, and he who asks, *what is truth?* and endeavors to find it by patient thought, and careful examination, is deserving of something more than the sneers and ridicule of the world), I shall at once proceed to inquire into the condition of the human economy in a state of sleep.

And in the first place, What is sleep? Is it a state or condition of rest of the mind and body, or simply of some portion of the organism? To arrive at the facts in the case, let us take for an example a person sleeping soundly. All the external senses are more or less locked up—in other words, resting. Neither the sense of vision, hearing, tasting, smelling, nor speech, attend to their respective functions in sound sleep. The muscles of locomotion are all quiet and immovable, and all those parts or portions of the brain and nervous system concerned in thought and feeling, no longer take note of time or circumstances, or the objects of earth or heaven. The individual on awakening can rarely give any account of himself, or what occurred during his state of sleep. The circulating system with the secretions and the respiratory movements all move onward regularly during such a state, and yet, on awakening, the person is unable to give any account of what passed during his state of rest. And what is particularly worthy of notice, as bearing on this question, is the fact, that the sleeper is generally, if not always refreshed and invigorated, so as to be ready and willing to resume again his

labors of body and mind. How often, too, have we not witnessed the restoration of the poor patient to health and reason, who only a few hours before was perhaps all but exhausted from the dreadful effects of delirium tremens? In this, as in all diseases and affections of the brain and nervous system which eventuate in some form of insanity, *sleep* is the only certain remedy. These statements require no special proof, as they are facts known to many intelligent persons not of the profession. So long as an individual sleeps well, there is little or no danger of the supervention of insanity. I suppose that all parts of the brain which are concerned in mental manifestations, require rest or sleep, as well as the muscles of locomotion. Not only man, but animals, birds, and all living things require sleep. Plants droop and suffer, when deprived of that great restorative principle of nature.

The opinion that sleep of two or three hours continuance can exhaust the powers of the system when in an enfeebled condition, seems to me unreasonable, and is not founded on any physiological or pathological principle with which I am acquainted. It is a common idea, that the mind may become fatigued, sick or diseased, and that it is never idle or asleep. I cannot conceive how all this can happen to an immaterial thing, which the mind is said to be. It seems to me, that physiological and pathological facts relating to the encephalon can best explain this matter, and one such fact is worth a thousand metaphysical speculations.

And now let me ask, What is the amount of our knowledge on this subject? What do we know of the use or purposes of the brain in health, and what do we know of its pathology? Certainly if we understood its physiology and pathology, we could talk intelligibly upon the great subject of mental philosophy. Have we any system on that subject recognized as sound in all its points, aside from phrenology? And yet who but the medical philosopher should best understand this matter, as also, the subject of sleep and its effects both in health and disease?

If these remarks should elicit one useful idea in behalf of our noble profession, I shall feel satisfied.

ART. V.—*Glanders or Farcy in the Human subject, as illustrated by the case of the late* DR. STOUTENBURGH, OF L. I. By WILLIAM W. STREW, M. D., Oyster Bay, L. I.

DR. P. A. STOUTENBURGH, whose death was recently announced as having occurred from glanders contracted from his horse, was a warm professional friend and neighbor, residing about two miles from our village. He was a remarkably stout, robust looking man, aged 42, of nervo-bilious temperament. During the past winter, he had been treating a favorite and valuable horse for glanders, and was repeatedly admonished of the necessity of caution in such cases.

I was called to him on Monday, April 11th. He had been complaining some days previously, with symptoms of common cold, affecting the general system; with headache, depression of spirits, prostration of strength, and pain in the joints, for which he was taking wine of colchicum, supposing it to be rheumatic gout, as he had formerly suffered from rheumatism. His tongue was loaded with a thick, yellow coating in the centre, white around the edges; bowels constipated; increased temperature of the surface; pulse 90, moderately full. I gave him sub-mur. hydrarg., and pulv. jalap, āā grs. x., with mustard pediluvium at bed-time.

12*th*. Medicine operated three times; still complains of stricture and pain about the chest; great anxiety, with hurried abdominal respiration; skin hot and dry; pulse 100, expectorating thick, tough, and tenacious mucus, with great thirst and internal heat; V. S. ℥xx. with pulv. doveri, grs. xv. at bed-time.

13*th*. Had a more comfortable night, with some mitigation of the most unpleasant symptoms; pulse 90, soft and free; still complains of great internal heat and thirst, and anxiety of mind. My friend, Dr. Townsend, met me this morning in consultation; we ordered a warm bath, and a pill composed of cal. gr. i, pulv. opi. grs. ⅓, pulv. camphor and James's powder, āā grs. ij., to be repeated every three hours. I was called in the night to see him, on account of his increased restlessness, which was somewhat connected with anxiety of mind

succeeded in quiting his fears, and gave him an anodyne pill of camphor and opium.

14*th.* Complains of increased pain and stricture about the chest, with a suffocating sensation, particularly in the recumbent posture; still great heat of the surface; pulse 94 moderately full; V. S. repeated ℥ xx., and continued the pill of cal. opium, &c., as above, every four hours.

15*th.* Rested more comfortably; there is mitigation of the unpleasant congestive symptoms. Continued the pill to-day, and an enema of soap and water to move the bowels.

16*th.* Still more comfortable, and continues to improve. Omit the pill to-day; no specific effect of the calomel observed.

17*th.* Remains comfortable, with the exception of a sense of prostration, apparently of the vital powers; tongue has a thick, muddy-looking coating, with slight disposition to nausea.

18*th.* So much improved as to be able to sit up and leave his room; prescribed for himself a mild laxative, in the form of seidlitz powder.

19*th.* Quite comfortable to what he has been, still complains of some uneasiness in the epigastric region; tongue remains much loaded; repeated the laxative in the form of ol. ricini.

20*th.* More restlessness and disturbance, particularly about the epigastric region, with increased constitutional disturbance; stomach was well acted upon, by an emetic of ipecac and antimony.

21*st.* Restlessness and prostration of the vital powers increased, with a typhoid tendency, and disposition to congestion of the vital organs, particularly the brain. There is also an aggravation of the former unpleasant symptoms, such as an increased temperature of the surface, thick, muddy-looking coating of the tongue; urine, scanty and bloody-looking; pulse 100. There appeared on different parts of the body, in the cellular substance, several elevated and indurated patches, which rapidly tended to suppuration; one appeared at the root of the nose, between the eyes. Dr. Rinelander, of Huntington, met us in consultation. We concluded to apply an epispastic

to the nucha and calves of the legs, to be dressed with ung. hydrarg., put him again upon the cal., and James's powder every three hours, and ordered his bowels moved at evening, with an enema of turpentine, and nourishing broths and stimulants to be freely given.

22*d.* Passed a restless night; there was an increase and aggravation of all the former unpleasant symptoms; also, increased swelling of the tumors, with considerable perturbation and confusion of mind, with some spasmodic difficulty in swallowing. He is evidently sinking with all the attendant symptoms of putrid typhoid fever; small, frequent and feeble pulse; a peculiar sensation of pungent burning heat of the surface; heavy cadaverous smell of the whole body, putrid odor of the breath, perspiration, and secretions in general. Omit the powder, and put him upon stimulants and specific treatment, as the carbonate of ammonia, creosote, turpentine, &c.

23*d.* Aggravation of every symptom in every form, with inability to swallow, from spasmodic action of the glottis, or swelling of the throat, great difficulty in respiration, with delirium.

There was increased swelling of the tumors, with a collection of matter in some, also numerous pustules began to appear in different parts of the system, rapidly accumulating, and some nearly ready to discharge. There was a gradual sinking of all the vital powers, with a rapid tendency to organic dissolution. He expired about 4 P. M., almost without a struggle.

The inferences to be drawn from the foregoing melancholy case, are of deep interest to the non-professional as well as professional reader. Notwithstanding the repeated admonitions to be more cautious, the doctor was unwilling to admit the nature of the disease in his horse, until a short time before he began to complain himself, when he ordered the horse to be killed. About this time, or, two weeks previous to his being taken, he received a wound on the index finger, from the tooth of the horse, while bleeding him in the mouth, which caused him a little uneasiness, and which many of his friends believed to be the exciting cause in producing the dis-

ease in himself. But such, it seems, could not have been the case, for the wound on the finger healed kindly; while on the contrary, we should have seen more specific influence of the disease originating from that point, and extending up the limb along the absorbents and lymphatic glands of the part, as is the case in dissecting wounds and other malignant poison introduced into the system in that way.

It will be observed, that the development of the specific symptoms of this disease were only manifested a very short time before his death, and then only in the form of "farcy buds," as they are called, or small tumors, which, together with the pustular eruption which characterized the true nature of the disease, forms another lamentable evidence of the contagious influence of the disease, as communicated from the animal to man. It has long been a recorded fact, that wounds resulting from the posthumous examinations of glandered horses were of a dangerous, and almost always of a fatal character, attributed to some specific poison or infection, analogous to that of any specifie action or particular virus. M. Leorin was the first to discover and prove the transmission of farcy from the horse to man, as recorded in the *Journal de Med. Veterinaire*, Feb., 1812. But it was not till 1821, that a veterinary surgeon of Berlin, by the name of Shilling, published the first detailed case of acute glanders in man; since that period we have had incontestable proof, that glanders and farcy are fundamentally the same disease, resulting from the same common cause, and differing from each other only in situation and circumstances. Also, that they are not confined, as was supposed, to the quadrumania or animals alone; but that they are transmitted by contagion as well as infection, not only from the horse, &c., to man, but from one person to another. We have a case recorded in the *London Medical Gazette* for April, 1840, of a man who died in St. Bartholomew's Hospital of glanders, and the nurse who attended, took the disease from him and died also. We are to understand that glanders or farcy are never developed spontaneously in the human subject, but that they originate in quadrumania; and where they do occur in man, they have been transmitted to him from

the lower animals; but, as we have seen, they may be propagated from one human being to another.

This contagious principle may be transmitted through the medium of the atmosphere, as well as by actual contact, from one animal to another. We have instances in which there was no possibility of contact with glanderous matters, and yet the disease was developed in healthy horses; and it appears that this contagious principle remains sometimes for years, where glanders or farcy may happen to have been developed. Persons have been known to have taken the disease without coming in contact with the animal, but merely sleeping over the stable where the disease existed; or from driving horses affected with it.

ART. VI.—*An Essay on Ergot, with New Views of its Therapeutic Action.* By A. K. GARDNER, M. D., Lecturer on Midwifery and Diseases of Females, in the New-York Preparatory School of Medicine, Member of Nat. Med. Assoc., N. Y. Acad. of Medicine, &c.

Ergota, Ergot, Acinula Clavus, Spurred Rye, Secale Cornutum, Seigle Ergoté, Fr., *Mutterkorn*, Germ.—Nothing, during the present century, has contributed more to the improvement of the art of midwifery than that which has followed the discovery of the peculiar virtues of the Secale Cornutum, Ergot, or Spurred Rye, as it is variously designated. Not even the wondrous virtues of chloroform and other anæsthetics, highly beneficial as they are in many cases of labor, have, as yet, accomplished or evinced the power of effecting the great benefits which follow the administration of ergot.

It is the purpose of this paper to give a detailed history of the introduction of ergot into general practice; some account of the opposition which it met with; its originally supposed properties; those now generally recognized as belonging to it; those attributed to it by some, and disputed by others; and, finally, some new views respecting its therapeutic influence noticed by myself, and supported by such corroborative testimony as I may be able to adduce.

An indistinct notion is a very different thing from a settled principle. There were many dreamers of a motive power to be produced by the aid of steam, who would have died unthought of, had not another actually discovered that which they sought; so with the peculiar virtues of ergot. The poisonous effects produced by eating diseased rye and other grain were known, and denominated Ergotism Epidemics, if the term may

be allowed, and had ran over whole countries. It had been recognized as a distinct disease as early as 1096 by Sigebert De Gremblour. A German physician, called Wendelin Thelius, gave an account of an epidemic which affected the kingdom of Hesse in 1596. A similar disease is recorded to have occurred in Saxony and Sweden in 1648 and '49; and in 1670, the subject was brought before the Academie des Sciences of Paris. M. Tessier, in 1777, made numerous observations upon its characteristics.

As a baneful disease in grain, producing most injurious effects in those who eat of it, ergot was thus early brought into notice; but as a medicine of potent effects, it was not known, certainly not to the profession, till it was introduced by Dr. John Stearns, late of the city of New-York, in the year 1807. Since that time, France, Germany, and perhaps other nations, have claimed the honor of the discovery, mere fancies, forgotten till recalled by the decided statements of Stearns.*

Perhaps the earliest record of the administration of this growth, in any of its forms, as a medicine, is to be found in the pharmacopœia of 1660, where the Diapenidion Reed enters into the composition of an electuary, the virtues of which were probably to be ascribed to the existence of ergot therein. One party considered that the Diapenidion Reed was an effective medicine in promoting childbirth, while others considered it inert. It was also recommended to arrest hemorrhage of the lungs and menorrhagia. The medicine was, however, found so uncertain (as it was liable to be from occasionally using the non-ergotized grains), that it was dropped from the pharmacopœia. The Alapecurus, or Fox-tail grass, is particularly subject to this morbid change.

Another genus of the same class and order, the Lolium or Darnel, as its derivation imports from δολιος, deceitful or adulterine; the δ being changed into λ, *euphoniæ gratiâ*, was found in ancient times to be affected with ergot. It is, by Gerrard, said to "cause drunkenness when eaten in hot bread; when taken in wine it stayeth the fluxes of the matrix, and according to Dioscorides, a fume made with it, barley, frankincense, saffron and myrrh, applied to the belly, healeth conception and facilitates the birth." Coles says, "that its seeds applied, stoppeth the courses."

Many of its properties are thus perceived to have been early known,

* It appears to have been empirically given first in France, to excite the womb, which, when unassisted, was not adequate to the expulsion of the fœtus. In Chapman's Therapeutics, published about 30 years ago, it is remarked, that in France "the practice seems not to be regulated with any propriety, and ceased after a short time."

and brewers availed themselves of it, to introduce into their beer, to produce speedy intoxication.

The letter from Dr. Stearns, dated Jan. 25th, 1807, may be found in the *New-York Medical Repository*, Vol. II., p. 308, and directed to Dr. S. Ackerly, of N. Y. The writer then resided in Saratoga county, N. Y., and since removed to this city, where, among other stations, he was the first president of the N. Y. Academy of Medicine. The letter is as follows:

"In compliance with your request, I herewith transmit you a sample of the *pulvis parturiens*, which I have been in the habit of using for several years with the most complete success. It expedites lingering parturition, and saves to the accoucheur a considerable portion of time, without producing any bad effects on the patient. The cases in which I have generally found this powder useful, are when the pains are lingering, have wholly subsided, or are in any way incompetent to exclude the fœtus. Previous to its exhibition, it is of the utmost consequence to ascertain the presentation, and whether any preternatural obstruction prevents the delivery; as the violent, and almost incessant action which it induces in the uterus, precludes the possibility of *turning*. The pains induced by it are peculiarly *forcing;* though not accompanied with that distress and agony of which the patients frequently complain, when the action is much less. My method of administering it is either in decoction or powder. Boil half a drachm of the powder in half a pint of water, and give one-third every twenty minutes, till the pains commence. In powder, I give from five to ten grains; some patients require larger doses, though I have generally found this sufficient.

"If the dose is large it will produce nausea and vomiting. In most cases you will be surprised with the suddenness of its operation; it is, therefore, necessary to be completely ready before you begin to give the medicine, as the urgency of the pains will allow you but a short time afterwards. Since I have adopted the use of this powder, I have seldom found a case that detained me more than three hours. Other physicians who have administered it, concur with me in the process of its operations.

"The *modus operandi* I feel incompetent to explain. At the same time that it augments the action of the uterus, it appears to relax the rigidity of the contracted muscular fibres. May it not produce the beneficial effects of bleeding, without inducing that extreme debility which is always consequent upon copious depletion? This appears to be corroborated by its nauseating effects on the stomach, and the known sym-

pathy between this viscus and the uterus. It is a vegetable, and appears to be a spurious growth of rye. On examining a granary where rye is stored, you will be able to procure a sufficient quantity from among that grain. Rye which grows in low, wet ground, yields it in greatest abundance. I have no objections to giving this any publicity you may think proper."

The above announcement of the new properties of ergot, was very generally attended to by the profession, and frequent experiments were made to test its wonderful qualities. Soon, the few medical journals of that day were filled with numerous and contradictory reports of its powers. There were many persons who denied that ergot possessed any such properties as were ascribed to it. Others corroborated the previous statement, and some ascribed to it new virtues, and discovered new applications.

At the present time, it is useless to consider the opinions of those who have denied its efficacy as a medicine. Their numbers, always comparatively few, have gradually diminished; so that now a disbeliever can rarely, if at all, be found. We can readily account for this opinion in honest, observing men. Ergot, like every thing else, is of various qualities; some is very weak, and some really inert. Some persons even now think that the ergot while growing, by changes of the weather, or from other causes, is occasionally inert; others that age injures it. Some are strenuous in the belief, that it should be fresh and kept whole, and only powdered when used. Others, that age improves, and that remaining powdered, and thereby more thoroughly dried, its virtues increase. With all this conflicting testimony at the present day, we can easily account for the variety of opinions at the time of its first introduction into medicine. General belief and testimony accord to it undoubted qualities; but from the comparatively few statistics upon this point, we give the following:

Authority.	Number of Cases of lingering labor in which it was used.	Cases more or less promptly terminated.	Cases where it failed to produce any effect.	Success moderate.
Bayle,	1176	1051	111	14
Ward,	60	59	1	
Paterson,	8	8		
Chevreul,	16	16 acted in ten minutes.		
Bower of Rochdale,	371	with no ill effects, save in two cases.		
Wardleworth,	1500	" "	most satisfactory results.	
Maslieurat,	7	6	1 of rupture ascribed to its use.	

In regard to the effect of ergot taken as food, writers have had many minds. We have, it is true, reports of whole districts of territory

where disease prevailed, which was attributed to the effects of ergot. In particular, a disease of dry gangrene is attributed to its being thus used. No mention of such disease, or any other, has latterly been ascribed to it, that I can discover, excepting the epidemic abortion among cows in 1841, to which reference is elsewhere made. Many trials have been made with no marked results. Parmentian gave the ergot, both whole and made into bread, to pigeons, fowls, and dogs. He took ʒ ss. himself daily for a week fasting, and ate the flesh of fowls fed on it, without the least inconvenience. Dr. Murray gave it to two beggars, who took every day three drachms in bread for eight days, and remained all the time in good health. On the contrary, Read says a pig fed on bran and ergot died gangrenous on the nineteenth day, and the Abbé Tessier gave it to ducks, turkeys, and pigs, to all of which it proved a deadly poison. Dr. W. Michell, who reports the above, took eighteen drachms in fourteen days without inconvenience. I have myself given it in very considerable doses, and for many days duration—say a drachm of the saturated tincture, or ten grains every hour or two, for a week or more—without in a single instance having seen any peculiar disease or affection ensuing therefrom. Neither have I ever heard or seen any such case reported.

The affections reported seem to be exaggerated in their description, and probably are to be ascribed to other causes. They are reported however in the following manner:

Epidemics of *spasmodic ergotism*, caused by eating bread made of rye containing a large portion of ergot, which visited different parts of Europe during the last century. This disease almost devastated Freybourg, and overran many of the cantons of Lusatia, Saxony and Sweden. According to Videlius, the patients were attacked with spasms and convulsions, accompanied with violent pains, which were said to equal those of luxation, and to be similar in their type. In some instances the patients became lethargic, and when recovering from such state, gave respectively signs of stupidity, intoxication, and extreme lassitude, after which the fit subsided for a time. But there generally remained vertigo, *tinnitus aurium*, *nebulæ oculorum*, rigidity of the members and excessive feebleness.

During the American war, the soldiers stationed at upper New-York were very generally sick, and as the sickness passed speedily away after the arrival of fresh flour from Ohio, it was supposed that it was caused by ergot mixed with the flour.

Dr. Arnal says, that after attentive reading of all that has been written upon the subject, he was convinced of the inertness of ergot to

produce these results, so strange, varied, and contradictory, and that this substance had but a secondary influence in the epidemics mentioned; but to other circumstances are we to look for their cause.

Dr. Copland says in his dictionary, article Ergotism,—"From some circumstances that have come before me, I should infer that unripe grain is productive chiefly of diarrhœa and dysentery; that diseased, impure, or blighted grain, most frequently occasions affections of the nervous and vascular systems, with disorder of the digestive organs, and contamination of the circulating fluids," &c.

Dr. Chapman of Philadelphia says (*Elements of Therapeutics and Materia Medica*), "that ergot produces gangrene is no longer doubtful." By a series of well-conducted experiments Dr. C. Byrd has shown, that pigs, ducks, and fowls, eating for a week or two food containing the ergot, acquire a gangrene state, by which the former lose their hoofs, and the latter their bills, and these experiments are contained in his inaugural address.—*Med. & Phys. Jour.*, Vol. II., pp. 112, 113.

Ergot is a modified form of grain, supposed to be changed by the action of the larvæ of some insect deposited as an egg in its substance, in an early period of its formation. Decandolle considers it to be a parasitic vegetable of tribe *fungi* and genus *sclerotium*. This view was announced by Léveillé, in a memoir to the Paris Linn. Soc., 1826. According to him a soft viscid tubercle may be seen at the earliest stage of the flower, surmounting the germ, changing its character with arresting its growth. The germ grows dark, and pushes the tubercle before it in its subsequent development; this also expands, a thick matter exudes, and forms a thin, yellowish coating, &c. All grasses are liable to a disease of this character, to which pathologists have given the name Clavus. Dr. Bigelow described it as one or more seeds usually enlarged or elongated, and projecting from the spike or panicle to which they belong; form irregular, texture light and brittle, of a dark color, an unpleasant taste, and incapable of germination.

Subsequent writers have stated that more frequently the whole ear is ergotized, that the form is as regular as any other grain, and its taste likened to the kernel of a nut, and its smell or infusion compared to that of new-mown hay. It has no husk or cortex, and from exposure to the air and weather it acquires a dark brown color.

Rye, of all grains, is most often affected with this disease. As the diseased grain is lighter than the healthy, it may be easily found, by observing in the field that the heads of grain thus changed stand upright, while the natural heads droop and bend downwards. But it is a product of most grains and grasses, and during certain seasons it may almost be said to affect every species of grain and grass.

Phaebus enumerates 31 grasses liable to it. "In the summer of 1838," says Pareira, "nearly all the grasses growing in Greenwich marshes were found ergotized. This disease is not confined to the *Gramineæ*—the *Cypereceæ* are also subject to it, and perhaps also the *Palmaceæ*."

The effects of these different specimens of ergot are probably the same; for, according to the *Journal of Med. and Chirurg. Pract.* (Oct., 1841), we find that "an epidemic of abortion" raged among the cows in the neighborhood of Trois Croix, in 1841, and that when M. Bodin, Director of the School of Agriculture, sought for the cause, he found that ergot was present in the rye, and various grasses of that locality. Dr. Reynolds, of Brockville, Eng., reports in the *Brit. Am. Review*, that he gave ergot of wheat in ʒj doses with the usual effects.

The chemical composition is as follows:—

Thick white oil	31 parts.
Osmazone	5½ "
Mucilage	9 "
Gluten	7 "
Fungin	11 "
Coloring matter	3½ "
Fecula	26 "
Salts	3 "
Loss	3½ "
	100

Wright's analysis.

In the infusion, after standing a few seconds, if the water has assumed a deep pink color, and the whole of the ergot has settled to the bottom, its parturient power may then be relied upon. But should the infusion appear milky and mucilaginous, with portions of the ergot floating upon the surface, partly soluble, and partly insoluble, under such circumstances the ergot is seldom, if ever, of value.—*T. H. Wardleworth.*

In reference to its various preparations and modes of administration, by far the most useful mode is the powder (freshly pulverized), infused for five or ten minutes in boiling water, and given, *both* powder and liquid. I have sometimes noticed that emesis would ensue when thus administered, but which would not be provoked by the liquid without the powder. The saturated alcoholic tincture is a convenient form, and the one which I usually employ. It may be relied upon as extracting and retaining its virtues for an indefinite period, and may, I think, be trusted to with more confidence than a powder hastily procured, and liable to be either old or imperfectly pulverized. The wine of ergot, or the venous tincture as it is called, has not been

found satisfactory in the few trials which I have made of it. Ergotine is favorably spoken of by European practitioners. Ergotine was supposed by Wiggens to be the active principle. It is a reddish brown, of a peculiar nauseous odor, a bitter, slightly acid taste, soluble in alcohol, but insoluble in water or ether. It was obtained by digesting ergot in ether, and afterwards in alcohol, evaporating the alcoholic solution, and treating the extract thus obtained with water, which left the ergotine undissolved. It was fatal to a hare.

Drs. Christison and Wright were unable thus to obtain ergotine—the latter considers the active principle to reside in the fixed oil.

M. Bonjean of Chamberry (confirmed by Felix Boudet, who was selected by the College de Pharmacie, to examine the memoir of M. Bonjean on the subject), considered that there were two principles in ergot—a poisonous oil, and a watery extract not poisonous, and possessing anti-hemorrhagic properties.

This view has recently been confirmed by Dr. Arnal of Paris.

Gilbert Burnett, Prof. of Botany, King's College, London, thinks that the principle of the ergot resides in the diffluent peridium or external covering—that rains falling while this is soft and moist, it will be washed away, and that remaining will be wholly inert. Dr. Klugge, of Mendelurtz, considers that it should be collected before the crop is cut, and adduces 15 cases in proof.

The following formulæ are given of its various proportions:

An Ethereal Solution.

℞. Ergot. ℥ iv.
Ether. f ℥ iv.
Misc. digere—pour off.

Evaporate to dryness, and redissolve in f ℥ ij. of water. Keep tightly corked. 25 minims is equal to ʒ ss. ergot. pulv. If it is not desirable to give ether, drop the required quantity on sugar, and allow it to evaporate.

An Ammoniacal Solution.

℞. Spt. of Ammon. Aromat., ℥ viii.
Ergot (broken), ℥ iv.
Misc.

Let stand a month and *express.*

Give gtts. xxx. every ten minutes. The ammonia causes the ergot to act more speedily, and with greater power.

Mr. Rowle says that ergot suffers more than most drugs from a small

parasite, and that if the insect be prevented from forming, or be destroyed early, its efficacy is more certain. He therefore advises that camphor be kept with it in a well stoppered bottle.

M. Victor Legrip advises in order to preserve it: 1st, reduce the recent well dried ergot into powder; 2d, dry thoroughly and quickly; 3d, put it into small vials, and carefully seal hermetically; 4th, either cover the bottle with dark paper, or withdraw it from the light.—*Journal de Chem. Médicale.*

Since the first announcement of the characteristics of ergot by Dr. Stearns, in which he states that "it augments the powers of the uterus," although many new properties have been ascribed to it, none of them appear to be established. The fact that nearly a half century has passed away, without adding to or subtracting from the original statements of the remarkable virtues of a drug of so great power, and since in so general use, is the best evidence of the carefulness and thorough character of the researches and observations made preparatory to its announcement to the world.

Still there have been, and perhaps will ever be those who think they have discovered new applications for it. Many of these we have collected and present in this connection. The *modus operandi* has been variously considered, and these contradictory views we have also gathered together, leaving the matter as unsettled as before. One point, however, seems to be decided, viz., the relative effects upon mother and child. Something, too, is gained as to the cases proper for its beneficial administration.

Ergot of rye is a stimulant to the muscular nerves of the uterus of the female, but to no other nerves in any marked degree. Borax and rue possess a similar action, but are not so efficient.

When labor is retarded on account of the atony or debility of the uterine muscle, and when also there is no obstruction or danger which can result from bringing on contraction, ergot supplies us with a ready and effectual means of doing this. It is also efficacious in cases of uterine hemorrhage, because the open mouths of the bleeding veins in the walls of the uterus are closed by the contraction which it causes.

When given in over-doses, ergot has a dangerous action on the brain, producing at some times narcotism, at other times syncope. But this is not the effect for which it is employed, and is altogether distinct from its operation, as a special stimulant, which is exerted only upon the ganglionic nerves of the muscular uterus. In small doses it produces no other effect than this.

Like the other medicines of this order, ergot is not an exciter of the heart and circulation. Its stimulant action is strictly local in its nature.—*An Essay on the action of Medicines in the system*—prize essay of London Medical Society, by Fred. William Headland, B. A., &c.

Dr. Beatty thinks that ergot of rye produces a noxious influence on the nervous system of the infant, during parturition, and to this may be attributed its fatal tendency in many cases, independent of asphyxia. If the labor is accomplished in two hours, the bad effects will not be seen. In such cases, the condition of the child was very unlike that of ordinary still-born children. "*The distinguishing characteristics are, the general lividity of the surface, the universal rigidity of the muscular system*, producing the stiffened limbs, and clenched hands in those infants in whom life was extinguished; and the remarkable kind of alternating spasm and palsy, which supervened in those that were resuscitated.

Dr. Meiss thinks that children are asphyxiated and killed by the continued contraction, and consequent disturbed circulation in the placenta and cord during prolonged ergotic pains; and himself scarcely ever gives ergot as an expulsive agent, but just at the birth of the child, to prevent subsequent hemorrhage.

Dr. Ebers, of Breslau (*Medical Gazette*, Jan., '46), gave ergotine in two grain doses, every two hours, to a patient laboring under uterine hemorrhage, in consequence of destruction of the substance of the uterus by malignant disease. The constantly recurring hemorrhage was invariably arrested.

Dr. Beattie, when hemorrhage has occurred in previous labors, gives ergot immediately on the birth of the child. He conceives that the remedy acts both by lowering the action of the heart, as well as by inducing contraction of the uterus. Has found it of great service when thus given, as a means of preventing those intensely severe after-pains, which some women suffer. He conceives, that in these cases it acts by producing a complete contraction of the uterus, and thus preventing the formation of clots in the interior of the organ, by which spasmodic action is excited and kept up.

Mr. Newnham observes, ergot is not to be administered to produce uterine action, nor to check hemorrhage, but to add to the power of feeble uterine contraction. * * * No man in his senses would think of giving ergot, when there was a probability of his being called upon to alter the position of the fœtus. * * * It should at all times be cautiously given, when there is *a known* tendency to uterine inertia, and hemorrhage after delivery; for the uterus having been violently stimulated, to

expel the fœtus, often falls immediately afterwards into a state of atony, and fearful hemorrhage may be the consequence. A dose of ergot immediately *after* the fœtal birth, may in such a case be oftentimes useful. It will be useless in cases of threatening abortion, until the expulsive pains have actually set in; it will be useless in all cases where the expulsive nisus is wanting.

Dr. Beatty further says in reference to the influence of ergot on the fœtus, "that the administration of ergot to a woman in labor is attended with danger to the child, whenever a time sufficient for the absorption and transmission of its noxious properties elapses before the child is born. The *degree* of effect produced differs with the time that elapses between the exhibition of the dose and the birth of the child. Hence the ergot should never be given in any case where there is a likelihood of the labor lasting more than two hours after its administration, except when it may be employed to save the mother's life. Secondly—if delivery is delayed two hours, we should resort to artificial assistance to save the life of the child."—*Dublin Journal.*

Secale cornutum rouses the system far more certainly than any stimulant, without raising the pulse; it does not act by a circuitous influence; nor does it induce a morbid arterial action, and thus rouse the torpid powers of the uterus; but its action is direct and specific, and from these circumstances we anticipate its complete adaptation in all natural labors, to the exclusion of stimulants. But we advance a step farther, and state that secale cornutum is not only the most powerful and safe partus accelerator, but that it is also a powerful dilater of the os uteri.—*T. H. Wardleworth.*

P. J. Murphy, M. D., in *London Lancet*, July, 1853, says, "ergot of rye coagulates the blood. * * * It is an erroneous idea to imagine that the ergot has a specific action on the uterus. On the unimpregnated uterus it has no action. It has utterly failed me as an emmenagogue. Even if pregnancy be of 3 or 4 months' duration, no perceptible action is manifested, for in a few cases I have inadvertently prescribed it, deceived by the character and representations of the patient."

Dr. W. Tyler Smith says, "I have no doubt that the true channel through which the ergot acts is the blood, and the organ it reaches and affects through this channel, is the spinal centre. I believe that the action of this medicine—potassio-tartrate of antimony—to be perfectly analogous to the action of the ergot of rye; that the one acts upon the medulla oblongata and the motor nerves of vomiting; the other upon the lower medulla spinalis and the motor nerves of uterine action. The ergot, therefore, is a remedy of centric utero spinal action. These

inquiries in the mode of action are not without a practical use. The ergot, in addition to its utero spinal actions, sometimes produces vomiting, thus affecting the medulla oblongata, as well as the lower segments of the spinal centre; but it is remarkable, that though an excitant of motor action in these instances, it diminishes the frequency and force of the heart's action. This action of the ergot is favorable in some cases of hemorrhage, but unfavorable in others, where failure of the circulation, and dissolution, appear to be imminent."

Prof. Murphy says, "from its indiscriminate use it has often failed in its effect. Ergot is quite inefficient in nervous exhaustion of the uterus, because, so far from acting as a stimulant, it seems to have a sedative effect (at least upon the heart), while its specific action is obvious the moment that exhaustion is removed. Opium is therefore of the highest value in saving a patient from the consequences of extreme flooding; ergot, in preventing such hemorrhage from taking place. Both remedies may be used in the same case, but one can never supply the place of the other."

Dr. Metsch states, "if the disposition to abortion depends upon an augmented irritability and contractility (a condition not always opposed to the first named), savine does not alone suffice, but a medicine is required that exerts a special effect in regulating uterine irritability, *the ergot of rye*, which should be added to the savine infusion in the proportion of one to two, where former miscarriages were induced by the primary contraction of the womb without preliminary hemorrhage."—*Zeitschrift fur Geburtkunde.*

Dr. J. W. Francis, professor of obstetrics in New-York, in his lectures, 1822, stated that he was decidedly of the opinion that ergot, when taken by a female, had a decided tendency to prevent subsequent impregnation, and has recently informed the writer that at the present date he still holds the same opinions.

John Patterson, of Aberdeen, says that he has used it in 8 cases only (1840), in half drachm doses, that it acted in less than five minutes, in which he lost three children; no inspection of the children was allowed, "but in two the conjunctiva was literally gorged with blood; and I have no doubt that death was occasioned by the uninterrupted pressure of the uterus upon the brain." In that way, and by premature separation of the placenta, he thinks more deaths are caused than by instruments; that he has never found any injury caused to the mother. The Medical Gazette commenting upon the article says, that in his opinion the death of the child is caused, not by the pressure of the womb on the child; nor to the entanglement of or pressure on the cord; nor to the premature de-

tachment of the placenta—but simply to the long-continued stoppage of the circulation through the vessels of the womb, and consequently to the want of proper oxidation and decarbonization of the fœtal blood.—Which view is confirmed by the fact mentioned by Dr. Carriere of Strasburg, that during the uterine contractions, the *blowing sound* produced by the flux of the arterial blood into the uterine sinuses, is very much weakened or wholly suspended, and again returns when the pain has subsided.

Dr. Barbieri (*Bulletin des Sc. Med.*, Vol. XVII., p. 345), having derived great benefit from the prolonged employment of ergot of rye, given internally, in cases of hæmoptysis and incipient phthisis, felt desirous of testing its powers as a remedial agent when applied externally. He deemed splenetic and hepatic engorgements, due for the most part to miasmatic causes, as suitable examples of disease for its employment, and reports in the paper that great success has followed its use. He either employs the powdered ergot alone, in the proportion of ʒj to ℥j of simple ointment, or when he wishes to produce more energetic cutaneous action, he adds 5 drops of croton oil, and in very serious cases five drops of creosote as well. He finds hysteria a frequent occurrence in a population inhabiting a paludal locality, and in such cases the above ointments are very advantageously applied to the inguinal regions.

Dr. Wright found it serviceable externally as an anodyne in rheumatism and toothache, and as a styptic in hemorrhage from wounds.

Dr. Moyle (*Lond. & Edin. Monthly Jour.*, 1841) reports two cases of polypus expelled by means of ergot given to arrest hemorrhage.

Dr. Somerville, ditto (*Lond. & Edin. Monthly* for August).

Dr. McFarlane, another (*Essay on Polypus of the Uterus*).

"When the ergot acts at all, we have usually remarked that it does so in 15 minutes from the time of its administration. If a bad description of ergot be used, it may naturally be expected that it will produce little or no effect. This we believe is the most common cause of its failure; but there is another not generally known, or recognized, viz., where it is given at a very advanced period of a difficult labor, when the pains have nearly entirely ceased, and the vaginal discharge has become fetid and olive-colored. Under these circumstances the drug rarely exerts any influence in bringing about a return of the pains; in fact, it would seem as if the muscular irritability of the uterus had been completely exhausted. It by no means follows, as a consequence, that the ergot will not act on the child because it does not act on the uterus; for we have seen numerous instances where the child was unquestionably affected by it, although the uterus was wholly unaffected, or nearly so. We have on many occa-

sions observed the ergot of rye to exercise a very depressing influence upon the maternal circulation, lowering the rapidity of the pulse ten or twenty beats per minute. In some few instances the effect lasted for two or three days."—*Practical Observations on Midwifery, by A. H. McClintock, M. D., and S. L. Hardy, M. D., etc.*

Mr. Allier considers ergot to have considerable power in cases of retention of urine. According to him, 1st, ergot restored contractility to a bladder which had been paralyzed by over-distention; 2d, it has succeeded when other remedies have failed; 3d, it has been equally successful in paralyses of the bladder following apoplexy; 4th, it does not exert any beneficial influence over hemiplegic limbs; 5th, it is useless in retention of urine from enlarged prostate; 6th, the medicine must be given in repeated small doses; but it may amount to a drachm and a half per diem.—*Prov. Med. & Surg. Journal.*

A case illustrative of the good effects in similar affections is recorded in the same Journal, 1844, p. 44; also by Dr. Ross—*Lond. & Edin. Monthly, Jan.*, 1844.

Dr. Isaac E. Taylor, of this city, reports a case of a female with uterine engorgement, who had suffered from repeated abortions. On one occasion, when he had applied six leeches to the os, he was unable to find but five. The patient soon began to complain of excessive uneasiness, without knowing what or why. This increased to such a degree, that it was necessary to give an anodyne to procure repose. Uterine pains soon began, and bloody discharges. The woman said that she knew she was about having another abortion. But the hemorrhage from the leech bites upon the os, ceased as soon as these symptoms commenced. Supposing that the missing leech had entered the os, Dr. T. gave ergot after some hours, and in the centre of a clot that was subsequently expelled, the dead leech was found imbedded.

In 1827 Mons. Goupil gave ergot with success for hemorrhage.

Drs. Spairani and Pignacea, of Milan, in 1830 report various beneficial results from its administration in cases of menorrhagia, metrorrhagia, hæmoptysis, epistaxis, and hæmaturia.

Dr. Bazzoni in 1831 administered it with reported success for leucorrhœa.

Dr. Maunsell, of Dublin, in Report of Wellesley Female Institute, states that ʒ ss. pulv. ergot, given by Dr. Churchill, every hour, produced headache, delirium, &c., which symptoms vanished on stopping the medicine, but were again produced when again administered. A second case in which Dr. C. gave ʒ ss. in two doses at 15 minutes interval, produced sleep, and ℈ j after waking induced vomiting.

Dr. Johnson reports ʒ ij in two doses produced coma, muttering delirium, lividity of face, &c., also gangrene of the external parts, sloughing of the vagina when given in paralytic affections.—*Med. & Chir. Journal, Oct.*, 1834.

Dr. Allier, in 1839, reports cases of paralysis of the bladder in old men, where ℈ ij every 24 hours produced stupefying effects, dilatation of pupils, slight twitchings.

Petrequin gave ergot with success for paraplegia, when moxas, &c., had failed, taking care, by nourishing diet, to avoid its septic tendencies.

Ducros reports more than one instance where its use was followed by gangrene of the heel.

Dr. Arnal says, that having given 20 centigrammes a day of the freshly pulverized ergot, without noticing the slightest result upon the uterus, he increased it to 60 centigrammes, and to 1 gramme in 24 hours. At this dose some females felt a quite severe colic in the pelvis and in the lumbar regions, but they were markedly the smallest number. Two felt weight in the head and slight giddiness. One at the end of a month felt itching of the hands and feet. * * * Two were relieved of constant and painful borborygmus, in one amounting to a tympanitis, accompanied with difficult respiration, difficult digestion, &c. "It is natural that a substance which augments the general contractility, contracting the intestines upon themselves, and in consequence of this compression upon the confined gases, facilitate their absorption."— * * *

In a single case of incontinence of urine, where there was no discoverable cause, we were compelled to consider it as proceeding from enervation, or at least from a modification in the natural contractility of the organ; at the end of twenty days' use of ergot the necessity of urinating ceased, the bladder, which never retained more than two tablespoonsful, returned to its normal capacity and tolerance, and the patient was perfectly cured of this inconvenience. This goes to prove the power of ergot on the muscular tissues.

Ergot appears to have no influence upon the secreting organs of this function. The patients have not urinated more or less than customary. Neither has the character of the urine undergone any appreciable modification. Oftener acid, we have but rarely found it alkaline, or as is observed in a state of health. Six times in thirty, it has appeared notably albuminous.

It is positive, that this substance is one of the most efficacious in medicine to arrest, we not only say uterine flows, but even epistaxis, hæmoptysis, in truth, all hemorrhages. Many interesting observations to this effect, which I have, remain for a future publication. I will men-

tion but one, that of a young lady, formerly under the care of M. Cruveilhier, taken in church with profuse vomiting of blood, so that it was feared she would die on the spot; two grammes of the powder and decoction completely arrested the vomiting, as it had frequently done in many similar cases.

The manner in which this is effected is not positively known, on account of the few cases in which an examination could be made. Still, M. Mialhe, who applies with so much zeal and success his great chemical knowledge to determining the method by which medicines act, has made several trials, with satisfactory results. He has satisfied himself that the ergot acts by precipitating, or rather by suddenly *organizing* the albumen of the blood, in such a manner, as to form a sort of stoppers, which placed upon the open orifices of the vessels, entirely prevent further flow.

We have ourselves observed, that drops of a solution of ergot, poured into a vessel containing albumen, immediately transformed this substance into numerous tenacious filaments, which resemble plastic lymph in its first stage of organization.

We have counted the arterial pulsations, at different periods of the day, in many cases, and it has been impossible to observe any difference between the days when this medicine was taken, and when it was not. In bad cases, while the number of pulsations remained the same, we have thought that they were stronger.

If ergot acts upon the muscular contractility (and the fact is not doubtful), it is certainly, so to speak, by second hand, and by means of the nervous system, and through the nervous centres; but we have never, in this respect, observed any direct and constant influence. It has never produced general agitation, nor spasms, nor convulsive movements; sleep during its administration has not been either more, better or worse. Nevertheless, one patient experienced itchings of the hands and feet, and six in thirty-six have felt a deep and lasting pain in the back part of the head and neck; a pain which was sometimes accompanied by vertigo.

Dr. Arnal considers that ergot possesses curative powers over the generative organs, and particularly over the various affections of the uterus, which have not generally been acknowledged. These various affections, from simple engorgements and hypertrophies, to cancerous disorganizations, all, he says, are modified by the therapeutical virtues of ergot. "Out of thirty-six patients affected with engorgements of the uterus, which we have treated by the aqueous extract of ergot, twenty-five had

also one or more ulcerations, generally superficial; some, however, more profound, had destroyed part of the neck.

Out of this number, twenty-two had a marked engorgement of the body of this organ, but this circumstance made no perceptible difference in the result of this treatment; the ergot acting, at the same time, upon the body and the neck, the cure has been nearly as rapid as when the neck alone has been affected. The medium length of treatment was three months.

Dr. Arnal also recommends this aqueous extract in the aphthous conditions of the vagina, eczema of the outer lips, in conjunction with the ioduret of sulphur. * * Simple engorgements, with or without ulcerations, have been treated by ergot alone, in such a manner as to leave no doubt of the beneficial effects of this medicine. These cures have been effected while the patients have continued their regular business, as laundresses, &c.

In a discussion upon a paper read before the Academie de Medecine, Paris, entitled "Ten Years' Obstetrical Practice," in which remarks were made by M. Depaul and others, some views were elicited, respecting the use of ergot, which we copy: "The third series comprises those in which the author has had recourse to the use of ergot. The first six were primiparæ. The membranes had been ruptured for some time, and the labor had already continued thirty-six or forty-eight hours. In all, the contractions had sensibly diminished, or indeed almost entirely ceased. M. Maslieurat administered one gramme of the ergot, divided into two doses, to each of the patients. The result was most happy. In every instance, the contractility of the uterus was restored, and in a few hours, without interference, all were delivered of living children." Such a result would appear to justify the conduct of the author. Nevertheless, says M. Depaul, such is not my conclusion, and in this I accord with the author himself, who, after an unfortunate experience, found his first impressions modified.

We have here a summary of the facts of the seventh case, which terminates the third series. A woman, aet. 37, well formed, but of delicate constitution, had a previous pregnancy, which presented nothing remarkable, either in its progress or in its termination. She was at the full term of a second pregnancy, which had also been as natural as the first. When our author was called to her, she had been in labor forty-eight hours, and the membranes had been a long time ruptured. The pains, which had been at long intervals, and feeble from the commencement, had entirely ceased 10 or 12 hours previously; the dilatation was complete; the head presented, and was fully engaged in the

superior strait. The conditions appeared favorable, and he administered two doses of the ergot of fifty centigrammes each. It was then 11 A. M.; the contractions were soon restored, and M. M. being obliged to leave, directed that they should send for him in two or three hours, if the labor was not terminated in that time.

He was sent for at 6 P. M., and as he lived at a distance, it was seven o'clock when he arrived. The condition of the patient had very much changed during his absence; he found the countenance very much altered in appearance, the nose and lips blue, and the features horribly contracted; respiration extremely difficult, short and quick; pulse thread-like and intermittent, and so frequent that it was almost impossible to count it; no part of the fœtus could be reached by a vaginal examination, the fingers only came in contact with a few soft fungous masses, the nature of which could not be determined. On examination of the abdomen, the uterus was found to be contracted upon itself, and extending from the umbilicus to the pelvic excavation. In the right iliac region, a second irregular mass was discovered, nodulated, easily displaced, and which was evidently the body of the fœtus. The contractions were not very energetic, and it was only three or four hours since the abdomen became painful. The patient died in about two hours. * * * After reviewing all the favorable conditions for the use of ergot, M. M. declared that it was impossible not to attribute to the energetic contractions produced by this drug, the rupture of the uterus.

The reporter, M. Depaul, admitting that the course pursued by M. Maslieurat was perfectly excusable, since he acted in accordance with principles generally received as correct, declares that he would condemn the ergot in those cases in which the report seemed to justify its use as well as in that which terminated so unfortunately. I have for a long time, says M. Depaul, observed the evils which occasionally result both to mother and child from the administration of this substance; and apart from its indication in certain hemorrhages, or in some cases of miscarriage, I believe the interests of the mother would not very much suffer by its entire suppression. When the labor has been prolonged to its ordinary limits, and there seem to be indications for hastening delivery, it is necessary, in choosing between augmenting the uterine contractions by the use of ergot, or when evidently insufficient for the expulsion of the fœtus, replacing them by mechanical extraction, to decide whether the inefficiency is dependent on the diminished power of the contractions or on the increased resistance. Although it is generally admitted at the present day, that this medicine is indicated only in cases where the obstacles to delivery are inconsiderable, or when the contractions

which may result from it will require to be continued only a short time, yet I think that all the indications that should forbid its use have not been sufficiently appreciated. One is ordinarily called to make a decision at a time, when, in consequence of prolonged labor, it is possible that an injury has already resulted to the child; to interpose then an agent which increases the uterine contraction, and of which the special action is to render it permanent, with exacerbations almost tetanic in their character, will be to increase very much the danger, by producing a disturbance in the uterine circulation still more serious, and which may terminate in that sad mechanical injury of which I had already reason to speak. The evident conclusion is, that in those cases which seem best adapted to the use of the ergot, it is prudent to resort to it only after being well assured of the state of the fœtal circulation; if upon examination this is found to have been materially interfered with, the use of the drug will be formally contra-indicated. The forceps, which in the hands of those accustomed to their use, are ordinarily safe, ought always to have the preference.

* * * * * * *

To this mass of conflicting evidence I will add my own views. Ergot is to be classed solely with nervines, for its sole and peculiar action is upon the nervous system. This view is supported by Arnaud and Payan of Aix, Ducros of Marseilles, Biett and Guersant, Jr. In the same manner that nux vomica and hydrocyanic acid act upon these organs generally, ergot acts particularly. The muscular nerves of the uterus are alone affected by this medicament, causing a tonic contraction of this hollow muscle. Whether this action is owing to its immediate absorption and entrance into the blood, is a matter of conjecture, though its sometimes almost immediate action may favor this view. This medicine very rarely, if ever,—I think never,—thus acts upon an unexcited uterus. Ergot has no effect upon the brain or nervous system other than above mentioned, does not act as a sedative, having no effect upon the circulation, the stomach, lungs, or other organs; has no emetic, cathartic, diuretic effect, does not act as an astringent upon any organ.

1st. Ergot acts upon the muscular nerves of the uterus. This is evident from an examination of its mode of action. Soon after its administration the uterus contracts with great force. At intervals of more or less length these contractions are more vigorous, but the uterus never returns to its relaxed state as it does when not excited by ergot. The consequence of this is, that when administered in menorrhagia or flooding after labor, the uterus contracts and is kept contracted, thus closing the mouths of the bloodvessels, and preventing the issue of the blood.

When a polypus, hydatids or tumor is in the cavity of the womb, this contraction may be so severe as to interrupt the circulation of blood, and thus destroy and finally to expel this foreign body. If a living child is in the womb when this medicine is administered, this contraction, if kept up for any considerable period, may have two injurious effects. If the child is not speedily delivered, the unremitting contraction may, by the simple pressure of the womb, destroy the circulation through the cord or through the placenta. That it does this is plainly seen when administered in cases of *placenta puvia*—the head or body of the child being forced down upon the placenta, the hemorrhage is often, where this effect is perfectly produced, immediately arrested. That the circulation of blood is retarded, is evinced by the appearance of the child, when not destroyed. Its blue appearance, which has been, and perhaps is still considered by some, to be due to the poisonous influence of ergot, arises solely from the imperfect circulation. This discoloration speedily passes away, after a few inhalations of air have decarbonized the blood.

The second ill result is sloughing of the soft parts of the mother. When, from the unrelaxed condition of the os tincæ, rigidity of the muscular tissues, a contracted or deformed pelvis, or a large child, the delivery is not effected when ergot is improperly exhibited (and ergot is always inadmissible in such cases), the constant contraction of the uterus presses the child down so strongly as to destroy the circulation of the blood through the soft parts of the mother, and thus to cause sloughing, producing vesico- and recto-vaginal fistulas. More such direful injuries, I think, have been produced by ergot, than all the instruments united, against which it pleases many ergot-giving doctors to fulminate their anathemas.

2d. This action of the uterus is a tonic one. When, therefore, from any cause the nerves of the uterus have lost their tonicity, the administration of ergot tends to restore it. To this point I ask especial attention, as upon this I base some important statements upon the use of ergot—in a class of cases usually deemed improper for its exhibition—based upon authentic facts.

The cause of abortion will probably be allowed to be sometimes from a debilitated state of the organ containing the fœtus. Its relaxed state opens the os, or in some way diminishes the circulation, and impairs its vital functions. The judicious administration of ergot improves its tone, invigorates it, and prevents the threatening miscarriage. Ergot is not a medicine of the cumulative order, neither is it confined to a single action. In small doses it does not produce the convulsive, evanescent contractions which accompany labor, but a slow molecular contraction, permanent and prolonged. If this local tonic is too freely administered, then it

passes on still further, and from a too high stimulation, produces from an opposite cause, exactly the same result that was threatened by the previous debility. In proof of this argument I will give a few cases as they have occurred in my own practice, and in that of others which have come to my knowledge, proving, if they prove any thing, that ergot is a preventive of abortion.

To the *New-York Medical Gazette* (Sept. 21st., 1850.) Vol. I. No. 12, I communicated a letter treating of the properties of ergot, some of which, I think, are little known, and narrating two cases where abortion was prevented by its administration. "An American servant who had been employed for several days in washing windows, had afterwards fallen, striking her back violently against the stairs. She was in the sixth month with her first child. When called, I found her suffering with severe pains, which came on at intervals of about twenty minutes; considerable lochial discharge, and the os tincæ somewhat dilated. A severe cough aggravated the trouble. I directed her to keep rigidly to her bed, and to take at intervals of three or four hours a mixture calculated to relieve her cough, and containing *sulph. morph.* in sufficient quantity, I hoped, to quiet her pains. For two days she took this mixture, occasionally omitting it, under the belief that her trouble was over, although the lochia continued to increase in quantity. At the end of this period, as she was unable to remain in her bed, and the prospect of abortion appearing to be more and more certain, I directed her to take tinct. ergot gutta xxx. quaque hora tertia. On going to see her in the evening, I found the pains entirely ceased, the lochial discharge suspended, and the day but one after she got up and attended to her domestic duties.

"A Mrs. Mc——, in the third month, as she supposed, thoughtlessly lifted a heavy trunk. In about fifteen minutes after she had a profuse discharge of blood, amounting to a pint, as she estimated it, per vaginam. Several years antecedent she had miscarried, and during a previous gestation I had attended her, when she narrowly escaped abortion. On being summoned on this occasion an hour after the accident, I found the os dilated, and the membranes felt to be ruptured; the blood continued to flow, but not so profusely, since she had taken to the bed. I advised the tinct. sec. cornut. a half teaspoonful to be taken every hour till relieved. In the evening she was much better, and the next morning I found her rashly sitting up, but she subsequently had no return of the trouble."

The following case is reported to me by Dr. G. H. Atwood, in a letter dated Woodbridge, Litchfield county, Conn., Oct. 26th, 1852.

"Two years ago last summer, a woman healthy, twenty-eight years and six months of age, pregnant, received a blow on the small of the back from a man's fist. It caused to appearance a bruise. She immediately complained of severe pain and faintness, and was obliged to keep her bed. She then, and ever since, has complained that her back feels as if a portion was gone, 'as if there was a hole in her back where she received the blow.' Her nurse applied rum and water, and camphor and water, and gave morphine. Next day I saw her, found some general excitement, face flushed, &c., pains recurring every fifteen minutes, and extending from the injured place in her back over in front, and down into her groins. I examined and found the os uteri opened so as to admit my index finger, and a trifle of color to the mucus. Fearing premature labor, I bled her, ordered a simple enema, and then morphine p. r. n. I left at night, and a neighboring doctor was called. He attended through the night, and gave morphine. Next day no better, we gave physic and moved off the bowels freely, without any relief, except a partial abatement of the sickness of the stomach, which supervened on the second day. She complained constantly of her back. I reasoned thus: Ergot gives power to the uterus; a flow would enfeeble the nerves of the spine, producing temporary paralysis. I will give it thus:—

℞ Rad. Valerian, ℥ ss.
Pulv. ergot, ʒ ii.
Sem. Foenieuli, ʒ i.
Aq. Bullient, ♁ i.

℥ ss. every hour, and gave it myself. This was the fourth day. After three doses she was evidently greatly improved, the recurring pains were diminished, and the os uteri had, if any thing, more of a contracting feel, and she took in all not more than five or six doses. I expected all the time before I gave it she would abort. * * * She went two months from the infliction of the blow, and then was delivered of a child, weighing four and a half pounds, female, skin wrinkled, having no nails, and looks like an old woman in miniature. * * * * Her husband sued for damages in the county court, and recovered $350. In defence it was argued that the ergot was given injudiciously, and caused all the trouble. That it would cause the child to appear as described. By plaintiff's attorney, I argued, 1st. That it was a tonic to the uterus. That the effect of a blow would destroy the equilibrium of nervous power, which moderate doses of ergot had a tendency to restore. 2d. That it would not procure abortion, only by producing a shock to the general system, which would endanger the life of the mother and child. 3d. That it was narcotic, and might in such small doses act as a sedative."

Very few writers have noticed any such properties as we ascribe to it. "Harles relates his observations founded upon cases of threatening abortion, where although complicated with hemorrhage it has been arrested by ergot." *

Dr. Condie states "he has known the ergot to be given in large and repeated doses by ignorant midwives, where pains simulating those of parturition have occurred towards the end of utero gestation, in order to quicken labor, but so far from doing this, the pains have actually ceased under its use, and labor has not recurred for several weeks."

Dr. Storer, in Vol. IV. of the Proceedings of the National Medical Convention, quotes, with a view to controvert them, my words, taken from the New-York Medical Gazette, No. XII.: "A woman may be months pregnant, and if there is no tendency to abort, ergot will not of itself produce abortion (I think this is now proved). But if labor is begun, this drug will stimulate and excite feeble pains, till they result in contractions more powerful than ordinary." This opinion is stated in similar words by M. Danyan, chairman of a committee from the Academy of Medicine at Paris, in answer to the Prefect of the Seine to the question, "What may be the influence of ergot of rye on the lives of infants, and on the maternal health?" The committee consisted of Danyan, Orfila, Adelon, Villeneuve and Merat; the report states, "with regard to the production of abortion by ergot, that there is no reason to believe that it is capable of influencing uterine contractions before the full period, unless they have been previously excited by other means."

Dr. Moore in the *N. H. Journal of Medicine* (Oct., 1850,) says, "that the general opinion of the profession, and his own experience, concur as to the fact, that ergot has but very feeble powers as an abortive agent."

Dr. Storer dissents from these views, and proceeds to qnote some cases in proof of his position, viz.:

Rigby's Midwifery, page 88.

Waller, London Lancet, Vol. X. p. 54.

Patterson, Lond. Med. Gazette, June, 1839.

Ramsbotham, Lond. Med. Gazette, Vol. XIV. p. 85.

Pereira, Elements of Materia Medica, 2d ed. Vol. II. p. 921.

Griffith, Notes to Taylor's Med. Jurisprudence.

Churchill's System of Midwifery, 1st. Am. ed. p. 279.

Also a case of a friend of the writer.

It has always been a difficult thing in medicine to establish the exact relations of things. Cause and effect in physic, as in more exact sciences, is not easily ascertained. In the very few cases quoted in support of the

*Arnal.

above position, it is easy to see that with all desire to be just, the reporters may themselves have been deceived by the patients in many instances. The numerous means resorted to by the females of the present day, even where no shame is to be hidden, to produce abortion, is known to the profession generally. In the cases where, from a deformed pelvis, abortion was procured by the physician, the uterus may have been unduly stimulated by manipulations, frequent examinations, &c. But allow them to be as described, true, do we not see that cases of this character will nearly all be reported, where scarcely an instance of the want of effect would be published, from an idea that it was not of sufficient interest to warrant such a proceeding? For this reason, the popular belief among medical men is of more value than the recorded statements of isolated cases. Is it not too much to claim that ergot will of itself originate uterine action and produce abortion, from the report of so few cases? Suppose that after administering the ergot with a known view of producing abortion, that it subsequently occurred? Cannot an equal number of cases be found where abortion followed the taking of a seidlitz powder, a dose of castor oil, or the injudicious eating of food? are such articles to be called capable of producing abortion. I have known abortion caused by the vomiting consequent upon taking a dose of laudanum. Is this, therefore, to be classed under the head of emmenagogues? Every physician knows that in conjunction with tansy, pennyroyal, and other herbs, "spurred rye" enjoys a reputation among the common people, and is frequently tried for the purpose of inducing abortion; and yet among the thousands of cases where it is taken every year, how few can be found to be recorded.

Griffith, quoted by Dr. Storer above, says, in the article entitled Ergot, in his annotated Christison's Dispensatory, "This singular action (exciting labor pains) has not been generally observed in animals when parturient (Wright); but it has been noticed by some experimentalists. It has been thought that such doses have also a tendency to excite miscarriage in the human subject, or to destroy the fœtus in the womb, but this opinion is not generally received. They certainly do not cause abortion in the lower animals." (Wright.)

M. Jacquemir (*Manuel des Accouchemens*), Vol. II. p. 465–6)—"Ergot of rye, which is sometimes employed as adjuvant (to the production of artificial labor), and which strengthens so well the uterine contractions during labor, does not appear to possess the power of provoking them from the outset." M. Goetz gave a rickety woman in two hours 25 centigrammes, who had the next day some slight pains, but without result, and he punctured the membranes.

Robert Lee reports two cases where the ergot had no effect except constant vomiting. In one, in the sixth month, 5 grains were given every 4 hours for 5 or 6 days; the last day she felt slight pains in the back and thighs 10 minutes after each dose; producing no effect, the ergot was given every three hours; the fifth day she had pains like labor pains, but they gradually ceased. It could not be continued on account of sickness and vomiting. The membranes were subsequently punctured.

In a second case of rickety pelvis, shortly after the menstrual flow had ceased, she took 12 grs. in infusion four times a day; after six days it was increased to 15 grs., and after six more, a scruple; after 6 more, 25 grs., and this having no result, it was increased to a half drachm. This was omitted for a week, and recommenced with drachm doses during four days. She took 7 ounces without effect, and Mr. Lee perforated the membranes at the sixth month.

Dr. Waller remarks in Denman's *Introduction to the Practice of Midwifery*, 7th ed. p. 236—"the ergot seeming to have the power of *increasing* rather than of *producing* uterine action. It cannot be depended upon, therefore, when it is found necessary to induce premature labor.',

Ramsbotham, quoted by Starr, says (*Principles and Practice of Obstetric Med. and Surgery*). "I am now in the habit of administering four or five doses (of ergot) at intervals of five or six hours, and of rupturing the membranes after their exhibition," evidently not trusting to the specific powers of the drug, for he could give no reason for rupturing the membranes before the os was dilated, where there was a desire of saving the life of a feeble fœtus of the 6th or 7th month. The ergot served to bring on labor more speedily after the ruptured membranes and lessened bulk had rendered abortion inevitable.

Dr. Condie, of Philadelphia, states that several instances have come under his observation, where several drachms of ergot a day were given for the express purpose of producing abortion without exerting the least effect on the uterus. In all these cases, gestation continued for the full period, and the females were delivered of living children.

Dr. J. B. Beck in his *Medical Jurisprudence* says, "I have seen one case of a female, who took ʒ iii. to procure abortion, without effect."

Dr. Tuthill, formerly member of the State Legislature, and now of this city, stated to the writer of this paper, that while practising medicine in the country he had repeatedly known pregnant females to gather the fresh ergot, and to eat large quantities for the purpose of procuring abortion, but no such result had come under his notice.

I have myself known several cases where this drug failed utterly in producing any such effect. In one case a lady of high standing, whose

husband had been absent in Europe for some two or three years, became pregnant, and anxious to avoid exposure, took various remedies that were proposed to her, viz. elaterium, aloes, savine, and ergot in very large quantities, ℥ ij. in ʒ j. doses of the powder, ℥ viij. of the tincture in teaspoonful doses—horseback rides, &c., without the desired result. I was suddenly called to see her by her husband, just returned from his protracted absence, and whose first duty on arriving was to go for a physician for his unfaithful spouse. Fright at seeing him had effected what medicines had failed to do, and from her I learnt the trials she had made.

I have found ergot of very great value in several cases of flooding. In one, a woman who in every labor, three or four, had experienced very severe flooding immediately after the expulsion of the child, threatening life from its excess, I administered ℥ ss. tincture as the head pressed upon the perineum, and repeated half the quantity soon after, and she had not the least hemorrhage.

I consider it of immense importance in placenta previa; and in several cases where I have used it freely, (one reported *Amer. Jour. of Med. Sciences* for July, 1852), I have found no other treatment or attention necessary.

In profuse menorrhagia I have often seen it arrest the flow in a few hours. In one case of uterine disease, where profuse menorrhagia for 10 or 12 days was followed by constant leucorrhœa and which I was treating by application of nit. argent. to the congested and hypertrophied os and cervix uteri, the menorrhagia was arrested almost immediately on the eighth day.

On difficult cases of Parturition and the use of Ergot of Rye. By MICHELL, London, 1828.

London Lancet, Jan. 1853, *Lecture on the Induction of Premature Labor.* By W. TYLER SMITH.

Proceedings of the 29th Annual Meeting of the German Soc. of Naturalists and Physicians, held in Weisbaden, Sept. 18th, 1852—reported Canada Med. Journal, Dec. 1852.

Observations on Ergot. By JOHN B. BECK, M. D., &c.

Murray's Materia Medica. By J. B. BECK, M. D., &c.

An Essay on the action of Medicines in the System—Prize Essay, having received the Fotheringill gold medal. By FREDERIC WM. HEADLAND, B.A. &c.

Practical Observations on Midwifery. By A. H. MCCLINTOCK, M. D. S. L. HARDY, M. D., &c.

Essay on the Chemical, Botanical, Physical, and Parturient Properties of Secale Cornutum. By J. H. WARDLEWORTH.

Memoire sur le traitement de quelques affections de la matrice par l'emploi de l'extract aqueux de seigle ergote. Par le Docteur ARNAL, ancien interne des hopitaux, médécin des asilés de Paris.

Transactions of the Imperial Academy of Medecine held at Paris, March 22d, 1853.

Ten years Obstetrical Practice in the department of Cereuse. By M. MASLIEURAT LAGEMARD.

Chapman's Elements of Therapeutics and Materia Medica. Med. and Physical Journal, Vol. II. pp. 112, 113.

ART. VII.—*The Pathology of the Cervix Uteri in those conditions attended with Leucorrhœal Discharges: being an attempt to reconcile upon a scientific basis, the conflicting views advanced by recent Uterine Pathologists;* (read before the Medical Society of the New York City Dispensary, March 21, 1853.) By ELISHA HARRIS, M. D., Physician to the N. Y. City Dispensary.

(*Continued from page 74.*)

THE anatomical structure and peculiarities of the cervix uteri, both in its healthy and its morbid conditions, seem to have received far less attention than the very important relations of this organ demand; we cannot therefore too highly appreciate the diligent labors of Dr. Tyler Smith, and his assistants, in the important investigations that have engaged their attention. By them it has been fully demonstrated, that the canal of the cervix uteri is the seat of a very extensive and important secretory apparatus; while the observations of all physicians who have carefully studied the phenomena of uterine diseases, corroborate the fact that this glandular apparatus is very frequently the seat of functional or structural abnormities, and that it thus becomes the *fons et origo* of serious, and often of very complex, pathological phenomena. Hitherto, however, the uterine pathologist has vied with the systematic anatomist, in the brevity, and technical obscurity with which the descriptions of these highly important structures have been dismissed. The general anatomist has, in a very summary manner described the peculiar appearance of the parts, under the fanciful terms *arbor vitæ uterinus*, *palmæ plicatæ*, etc., while the pathologist, and the accoucheur have been equally successful in rendering obscurity and confusion worse confounded, by erroneously defining every abnormity of these structures as *ulceration*, *granulation*, *erosion*, etc., and affixing to each phase of such diseased conditions, some unimportant definitive appellation, e. g. "*bleeding ulcer*," "*granulation ulcer*," "*cock's comb granulation*, etc. Though it must be acknowledged that such descriptions and definitions are highly unsatisfactory, they nevertheless indicate important facts relative to the minute anatomy, as well as to the nature of the morbid

changes of the structures in question. By referring to the terms used by various uterine pathologists, and comparing them with the facts demonstrated by Dr. Smith, we may see the exact significancy and value of such terms and expressions, in the descriptions which have hitherto been given in reference to the diseased conditions under consideration.

Of the anatomical structure of the mucous membranes and glands of the cervix uteri, the great work of Quain, contains the following brief account: "The mucous membrane which lines the uterus is thin, and closely adherent to the subjacent substance, especially in the body of the organ. * * * Between the rugæ it is provided with numerous mucous follicles and glands." Paul Dubois, in his great work, entitled "Traite de l'Art des Accouchements," gives the following very careful description of the uterine cervix: "The cavity of the cervix represents a small elongated canal, flattened and fusiform, dilated towards its centre, and becoming narrower at its extremities. Its two walls, one of which is anterior, and the other posterior, present each at the median line, a longitudinal eminence, or crest, which appears to be the continuation of the less marked ridges, existing in the walls of the cavity of the fundus. From each of these crests, numerous folds are given off laterally; these are thick, regularly arranged, one above another, and less united at the centre than at the extremities. They take a somewhat oblique direction upwards and outwards, towards the lateral walls of the canal, where they terminate at another vertical but less apparent line. Thus arranged, these folds seem to be formed between the two vertical crests, like oblique steps of a ladder, and are a little concave above; the meeting of theses branches, which somewhat resembles a fern leaf, has been termed the *arbor vitæ*.

"Between these folds rather deep grooves are seen, which are occupied by a great number of mucous follicles. The excreting orifices of these glands are frequently obliterated by accidental causes, and, the mucus accumulating in their cavities, they acquire a remarkable development. In this state, they were taken by an ancient anatomist, Naboth, for human ovules." M. Robin has stated that the mucous glands of the cervical canal extend from the os tincæ, to the line separating the cervical canal from the cavity of the uterus; and he describes these glands not as similar mucous follicles, but as small cylindrical tubes, terminating in a round cul de sac, presenting the appearance and figure of a bottle. Sir Charles Mansfield Clark thus very accurately describes the follicular characteristics of the cervix: "The cervix of the uterus is beset with a number of glands. These glands are more readily discoverable in women who have died pregnant. * * * The cervix of the uterus is

a glandular part; its secreting organization can be demonstrated. It is subject to the diseases of glands in other parts of the body, and in all probability, will be particularly liable to take on disease in habits which are prone to other glandular complaints—namely, in weak habits." Thus we see that the glandular apparatus of the canal of the cervix uteri is alluded to by the anatomist and the pathologist, but no sufficiently careful and thorough examination and description of it had been given previously to the publication of Dr. Tyler Smith's paper. The importance of this glandular structure, and also the interesting nervous relations of the cervix uteri, must be obvious to every one who is familiar with uterine diseases. A careful examination of a large number of cases, applying for relief from leucorrhœa, &c., has fully satisfied me that the morbid alterations, upon which these affections depend, are in the great majority of cases to be sought in the canal of the cervix uteri; and further, that in order to the successful cure of such morbid changes in this organ, it is, not unfrequently, essential that the cause or causes of these changes be diligently sought out and abated. We have thus extended our remarks upon this subject, because of its relative importance, and its highly practical bearing upon the rational and successful treatment of the diseases affecting the structures under consideration.

The writings and opinions of Sir Charles Mansfield Clark, Dr. Marshall Hall, Mad. Boivin and Professor Dugés, Dr. Robert Lee, and Dr. J. Henry Bennett, are so generally read and understood, that we need but briefly refer to them severally.

The publication of Sir C. M. Clark's great work on the "Diseases of Females, attended by Discharges," formed an important era in the history of this department of medicine; and notwithstanding that some of his conclusions were erroneous, made, as they were, without the aid and the rigid tests of dioptric examinations, it must be acknowledged that his observations are in the main exceedingly accurate and valuable; while his opinions and the results of his extensive experience are eminently instructive, and practically important. We shall have occasion to refer to Dr. Clark's classification of the diseases under consideration, and to his opinions concerning their pathology. Of the joint labors of Mad. Boivin and Professor Dugés, it may be safely said that they yet remain unrivalled for extent and accuracy; while the doctrines they taught twenty years ago, are as sound as any that have been promulged since that date. With the aid of the speculum, these veteran practitioners in their immense public and private practice, were able to arrive at reliable conclusions concerning the pathological phenomena and lesions

connected with uterine affections. Their observations concerning the pathology of leucorrhœa, accord very fully with all that is at present known upon the subject of uterine pathology. We will quote from their excellent treatise, only the following remark: "Leucorrhœa is an accompanying symptom in many affections, in which the cervix only is diseased. Hence the uterus, and especially its cervix, ought to be considered as the source of most simple leucorrhœal discharges. There are some, however, which proceed in a great measure, if not entirely, from the vagina, or at most from the vagina and os."

The recently published treatise of Dr. J. Henry Bennett, of London, gives us essentially the same pathology as was long ago taught by the eminent authors last mentioned, and nearly the same as held by Lisfranc, Duparcque, and many others. The *ex cathedra* and vaunting style of Dr. Bennett's writings, make him appear especially learned in uterine pathology; and the record of his *cases* may seem to corroborate the claim he so earnestly urges to the right of being considered an original discoverer of facts in the history of uterine diseases. Dr. Bennett's views are so well known, that we will only refer to his description of ulcerations of the cervix uteri, and to the three hundred *cases* he has recorded. First, the history of the cases. Of these three hundred cases, he found two hundred and forty-three suffering from decided inflammatory disease, in which number there existed what he terms ulceration in two hundred and twenty-two; and in one hundred and sixty of these cases leucorrhœa was a prominent symptom. Now, what was the form of ulceration which Dr. Bennett found so prevalent among his patients at the London Western Dispensary? This is his definition and description of the abnormity in question. "An ulceration occupying the cervix uteri, may present all the various modifications which suppurating surfaces offer in any other part of the body, from the minute granulation of a slight abrasion, to the livid vegetations of an unhealthy sore; but these modifications of the ulceration require in reality no division or classification. When an abrasion or excoriation only is present, the cervix is generally of a vivid red, and the granulations are often so minute that it is at first difficult to ascertain whether the mucous membrane is abraded, or merely congested, or to perceive the limit of the excoriation when once it has been ascertained to exist. * * * An abraded or excoriated condition of the mucous surface is generally the form under which ulceration presents itself in the cavity of the cervix; granulations of any size being seldom met with in this region. * * * Whatever the character of an inflammatory ulceration of the cervix, the ulcerated surface is never excavated; it is always on a level with, or above the non-ulcera-

ted tissues that limit it; and its margin never presents any abrupt induration. Owing to this circumstance, it is always impossible to determine by the touch the precise point at which the ulceration terminates." Dr. Bennett thus describes very accurately certain morbid conditions frequently occurring in the cervix uteri; but this use of the term ulceration, as well as the mode of treatment adopted for the cure of these affections, has led to a somewhat acrimonious discussion of the merits of Dr. Bennett's writings, and of the propriety of the remedial measures which he adopts. Among the more prominent of his opponents are Dr. Robert Lee, Dr. Ashwell, Dr. Marshall Hall, and Dr. Tyler Smith; while such men as Dr. Locock, Accoucheur to the Queen; Dr. Tilt, Dr. Edward Murphy, Dr. Whitehead, and Dr. Evory Kennedy, are in the habit of describing and treating uterine affections as is done by Dr. Bennett.

The propriety and the morality of using the speculum matricis in the investigation of these forms of uterine disease, has given an unpleasant piquancy to the controversy between these gentlemen; though there seem to have been other notions than those of moral and religious scruples, prompting this controversy, and which are more discreditable to the opposing party, than are the loose and faulty definitions of uterine ulcers, and the somewhat questionable practice of Dr. Bennett and his friends. The difficulty seems to be just here,—Dr. R. Lee, Dr. Ashwell, and others had written much upon uterine pathology, and had enjoyed the largest opportunities for obtaining a practical knowledge of female diseases. Dr. Ashwell had made a careful examination (without the speculum), in more than 1000 cases of uterine disease, and found but 25 cases which he should consider ulceration of the cervix uteri. Dr. Ashwell has moral objections to the use of the speculum, etc. Dr. Lee was always opposed to the use of the speculum, and always prefers to predicate his diagnoses upon evidences obtained *par touchès*. Besides, gray hairs gave these gentlemen a right to speak without contradiction. Dr. J. Henry Bennett, an energetic young physician, recent *interne* in the Parisian hospitals, returned home to London, serves in the Western Dispensary, writes a book, making rather liberal claims for originality of pathological views, and therapeutic practice. Dr. Lee says, "these things are not all *new;* for more than 16 years ago I described in the Cyclopædia of Practical Medicine, under the title of Inflammation of the Follicles of the Os Uteri, the disease which is now erroneously termed by this young Dr. Bennett, 'Ulceration of the Os and Cervix,' and Madame Boivin had previously described the same disease, under the title, 'Granular Inflammation of the Os Uteri.'" Dr. Tyler Smith says, "Practising as a physician accoucheur, I must get the same class of patients

as those treated by Dr. Bennett. I do not find uterine ulceration, at least not what seems to me to warrant the term, so frequently as Dr. Bennett, in leucorrhœal cases, purulent, or muco-purulent. I find inflammation, engorgement, induration, excoriation, patches of apthæ, epithelial abrasions, and granulations, but very seldom what I should call ulceration."*

Therefore, there is an attempt made to put down Dr. Bennett and his book. The excellent Dr. Ashwell, in lachrymose mood, states before the Royal Med. Chirurg Society, that the painful necessity of employing the speculum will force him to retire from the practice of diseases of women; and then, even that grave and learned society greet with most enthusiastic cheers, a lengthy paper and a longer speech by Dr. Lee against the employment of the speculum, and against the honesty of its advocate, Dr. Bennett. The particular friends and supporters of Dr. Marshall Hall and his doctrines of reflex nervous pathology, seem also to fear that their ingenious theories are in danger! So, finally, in and about the aristocratic sections there is raised a great furor against the speculum and all who employ it; and all this effort is made ostensibly for the defence and protection of female chastity in the Queen's dominions. Now, in all this earnest discussion, there has been elicited some truth, and we shall find that here, as elsewhere, the adage holds, "*in medio tutissimus ibis.*" Indeed, all parties are happily agreed as to the very frequent occurrence, and the peculiar appearance of certain morbid conditions of the mucous membrane of the cervix uteri, and which have been described by Dr. Bennett under the term ulceration; and it is principally in reference to this use of the term, and the relative importance of the lesion, together with the mode of treatment, that the distinguished physicians above-mentioned, have so warmly disputed. Of the propriety of such use of the term ulceration, and of the exact nature of the pathological conditions in question, we may speak hereafter. Whoever reads Dr. Bennett's book attentively must be satisfied that his use of the term ulceration is fairly open to criticism, as are also his views of the relative importance of the lesions to which he affixes this term, though his general descriptions of these morbid conditions of the cervix uteri are exceedingly accurate. Probably no writer has done more to awaken an interest in the study of uterine pathology, than has Dr. Bennett, and none has written more practically. The importance which he attributes to the local phlegmasia, and to the morbid conditions which he denominates and treats as ulcerations, may be, in a measure, erroneous and faulty, but certainly not in the degree his opponents have represented.

* Lancet, Vol. 2d, 1850.

It is an interesting and instructive fact, that those who make the most important advancement in the study of any department of special pathology, are apt to entertain exaggerated opinions of the relative importance of the special subjects of their investigations. This holds equally true of Dr. R. Lee, who has devoted himself to the study of the uterine nerves; and of Dr. Tilt, who has made a special study of the ovaries and their nervous and organic relations, as of Dr. Bennett, who has especially studied the anatomical lesions occurring in various uterine affections.

We come now to the second part of the examination proposed in our paper, viz., *A Comparison of the Statements and Facts advanced by the Leading Uterine Pathologists.* The principal points that claim our examination for comparison, may be included under the following heads:

1st. *The Nature and Source of Leucorrhœal Discharges.*

It is well known that Sir C. M. Clark based his divisions of uterine diseases upon the color and appearance of the discharges accompanying them. He states that the white opaque mucous discharge "belongs to one condition of the uterus only, and that it characterizes that condition with marked constancy." This white discharge he believed to originate only from the glands of the cervix uteri; while he taught that the transparent mucous discharge was secreted only in the vagina. We need not be told that Dr. Clark made his investigations without a speculum; for all who are familiar with dioptric examinations of the vagina and cervix uteri, know from actual observation, that the secretion from the cavity of the cervix is a glairy, transparent mucus, while that bathing the vagina is white and curdy, or milky. All who have examined this subject, must agree with Dr. Tyler Smith and Mr. Whitehead, concerning the facts which their investigations have demonstrated in reference to the nature and origin of leucorrhœal discharges.

2d. *The Physiological Alterations and the Structural Lesions which are the Proximate Causes of Leucorrhœa.*

That the mucous tissues of the genital organs should be subject to an abnormal degree of secretion might certainly be expected, especially when we consider the wonderful sympathies which exist between these organs and the nervous system and the mind, as well as with the various viscera of the abdomen. It was from these relations of the uterus that the ancients accounted for leucorrhœa, and in our own time, the doctrines of the reflex nervous pathology are made to account for this and almost all other manifestations of disease. Whatever may be the relative importance of this class of causes, they certainly are not among the least. But there are physiological alterations and lesions of struc-

ture that are found very constantly in connection with leucorrhœa. 1st, engorgement of the uterus or of its cervix; 2d, congestion and inflammation of the utero-vaginal mucous membrane; 3d, excoriation and ulceration of the cervix uteri; 4th, a peculiar abnormity of the glandular structures of the canal of the cervix, probably depending upon other and more general pathological conditions of the uterine organs, or of the whole body.

Sir C. M. Clark was perhaps the first to propound a rational pathology of the uterine diseases attended by discharges. In the first part of his treatise he describes a series of uterine affections, which are attended by a transparent gelatinous and glairy discharge, usually not very abundant. The diseases mentioned in this class, are, procidentia uteri, p. vesicæ, and p. vaginæ; the fleshy tubercle or fibrous tumor, and also a class of cases in which he considers that there is increased action or simple congestion of the vessels of the uterus, and a still larger class in which this engorgement has become chronic. In the second part of his treatise, Dr. Clark very accurately describes the general symptoms of a class of cases affected with disease of the cervix uteri, of which he believes that a white amyloid mucous discharge is prominently symptomatic. "In many instances," he remarks, that "this white mucous discharge is much thicker than cream, having the tenacity of glue, and an appearance corresponding with the mucus that is separated from the cervix uteri at the commencement of labor." Mark this admission concerning the occasional character of this mucus, and also the following fact stated by Dr. Clark: "Women are the most liable to the *white* mucous discharge between the age of 20, and the period at which the menses cease," the period during which the glandular portion of the cervix uteri is most liable to disease. We refer to these observations of Dr. Clark, 1st, because we may rely upon his general and minute accuracy; and 2d, because his ideas concerning the nature of the discharges and their pathological causes, are really correct, though erroneously conceived. The real nature of leucorrhœal discharges is now more fully understood, and the description given of them by Dr. Tyler Smith is perfectly accordant with all that has been observed by the best pathologists. Now, by referring to the descriptions given by Dr. Clark, and comparing them with those of Dr. Smith, we find that they are perfectly harmonious, as also are their opinions of the pathology of leucorrhœa, so far as Dr. Clark's views are expressed. The errors into which Dr. Clark has fallen concerning the origin or seat of certain forms of leucorrhœal discharges, are certainly not greater than is the following statement of Dr. Henry Bennett, concerning the creamy discharge so often presented in females suf-

fering from disease of the cervix. Dr. B. confidently asserts, but erroneously we think, that "the white, milky, creamy fluid which is so commonly met with in females, and which has given the name to vaginal discharges generally, is the secretion of the numerous mucous follicles which cover the cervix, and probably also, of the follicles existing in the upper part of the vagina." Our own observations concerning the chemical characteristics of uterine and of vaginal mucus, and the changes which the transparent cervical mucus undergoes in the vagina, fully correspond with the observations which have been made upon this subject by M. Donné, Mr. Whitehead, and Dr. Smith.

3d. *The Nature of those structural changes that are denominated Ulcerations and Granulations of the Cervix Uteri.*

MM. Recamier, Lisfranc, Dupuytren, Dupareque, Gendrin, Gibert, Kennedy, Murphy, Locock, Roberts, Bennett, and a host of the most intelligent pathologists, have, during the last thirty years, with the aid of the speculum matricis, pursued their investigations of uterine maladies, and have uniformly found that peculiar lesions of the muco-genital tissues are very constant attendants on chronic leucorrhœal discharges; and they have found that when these lesions have been healed, the leucorrhœal and all other symptomatic difficulties disappear. These pathologists have chosen to denominate these structural alterations, ulcerations, granulations, &c.; and, at the same time, they have frankly admitted that these alterations do not differ from abrasions, erosions, apthæ, morbid vascularity, granulations of the conjunctiva, &c. On the other hand, Dr. Robert Lee and others have felt that this faulty definition of uterine ulceration is a dangerous evil, that the search for ulcerations by means of the speculum was at once improper and immoral, and that this false definition, and the special curative means based upon it, led to faulty and dangerous practice. Dr. Lee, Dr. Ashwell, and Dr. Tyler Smith, find, on looking over their notes of cases, only about one case of ulceration in fifty of uterine disease; but they have all observed the frequency of certain peculiar alterations, exactly similar to those designated ulcerations, &c., by Dr. Bennett and the French pathologists. Here the controversy between these parties should have ceased; but it is still going on, and the musty records of every dead-house and hospital in London are being searched for evidences of the infrequency of ulcerations of the cervix uteri. Of the infrequency of *excavated* ulcers of the uterus there can be no doubt. I have seen but five or six cases in more than a thousand examinations by speculum, of patients applying at this dispensary for the cure of leucorrhœa. But there is a form of granular inflammation of the mucous membrane of the cervix uteri, which is very

frequently met with; besides this, all who use the speculum will more frequently observe epithelial abrasions, excoriations, and vascular engorgement of the mucous membrane, or of the body of the cervix. Simple epithelial abrasions and excoriations cannot properly be termed ulcerations; while the granular inflammation is more properly a disease of the villi of the mucous follicles of the cervix and os. All observers agree in their general descriptions of the latter affection, and M. Chomel has very appropriately denominated it the granular, or raspberry inflammation. It is, perhaps, the most frequent form of structural alteration that has ever been observed in cases of leucorrhœa. The principal pathological element of these granulations is an abnormal vascularity of the villous structure of the follicles of the os and cervix uteri. This morbid condition is most frequently observed in the os or within the cavity of the cervix, though we meet with a considerable number of cases in our public charities especially, in which there is found upon the exterior of the cervix, patches of abraded epithelium, and sometimes covered with irregular and luxuriant granulations; but these cannot be considered as ever being the seat of leucorrhœal discharge; and to me they appear to be mere accidents, or events in the history of more important diseased conditions, either local or constitutional; and if our observations and study of uterine affections have not deceived us, the same facts hold true in reference to the abnormities so often observed in the cavity of the os and cervix. We have for some time been of the opinion, that a very large proportion of the cases in which the canal of the cervix is found in that morbid condition usually denominated ulceration, or granulation, the real and only pathological alteration of the part consists in an abnormal vascularity and hypertrophy of the glandular structures of the cervix, with or without high inflammatory action. A very satisfactory proof of this may be seen in that morbid condition, which Dr. Kennedy has denominated the "cock's-comb granulation," and also in the bleeding ulcer of the cavity of the cervix.

There is a peculiar form of ulceration, so called, which is frequently seen in our examinations at this dispensary, usually observed in those females in whom we can trace the history to an attack of syphilis either in their own persons or in their children. It is usually situated upon the anterior lip of the os uteri, and it very strikingly resembles, and, indeed, is frequently co-existent with the syphilitic mucous tubercle, situated upon other parts of the body. Its form is usually circular, is sometimes highly vascular, bleeding when touched, and sometimes quite insensible, and possessing little vascularity. We have seen such patients treated solely with caustics, &c., without permanent benefit, while we have never

known a case fail of cure where an anti-syphilitic course has been thoroughly followed. There can be but little doubt of the syphilitic origin of this form of granular inflammation, though Dr. Bennett very deliberately sets aside this supposition, and attempts to disprove the correctness of M. Gibert's conclusions on this subject.

4th. *The Constitutional Relations and Complications of Leucorrhœa.*

These have been very attentively studied by Dr. Marshall Hall, Sir Charles Clark, Dr. Robert Lee, Dr. Ashwell, and others. Whatever success in the treatment of uterine affections may have been achieved by the aid of the speculum and the use of the cautery, it is a fact fully corroborated by the experience of the best practitioners, that the constitutional relations of uterine diseases, and especially of those in which leucorrhœa is a prominent symptom, are of primary importance. The teachings of Sir Charles Clark, and Dr. Marshall Hall, may be taken as reliable authority upon this subject; and the recorded experience of even Dr. Bennett, Dr. Kennedy, and those who regard the *local* treatment of primary importance, goes, so far as results are known, fully to corroborate the remark we have just made concerning the importance of the constitutional relations of uterine maladies.

On reading the statements of Chomel, Lisfranc, and Bennett, we might be led to believe that with the speculum and a well-armed *porte-caustique*, the cure of leucorrhœa, &c., might easily be effected at once by a very simple local treatment; but we believe that a close investigation of the facts in the practice of those who have boasted of superior success in an exclusively topical treatment of these uterine affections, will but furnish additional evidence of the primary and indispensable importance of constitutional and hygienic treatment in this interesting class of diseases.

It is true that Chomel and many others have averred that the caustic is a specific cure for uterine affections accompanied by leucorrhœa; but these gentlemen admit that the granulations, ulcerations, &c., are liable to return; and so far as we have been able to ascertain, these local lesions are very sure to return, unless other and more general agencies are brought to bear upon the health, habits, and the general hygienic conditions of the patient.

Having thus sketched and compared the most important facts connected with the pathology of those diseases of the cervix uteri attended by leucorrhœal discharges; let us now deduce those facts and principles which may be of the highest practical importance to us as physicians.

1*st.* Leucorrhœa is a prominent and very constant *symptom* of local congestive and inflammatory affections of the uterine organs, especially of the os and cervix uteri, attended more or less, constantly by structural lesions, and by important constitutional complications, of which the local affections may be either resultant or causative.

2*d.* That whatever be the anatomico-pathological lesions, and whatever the constitutional complications existing in cases of leucorrhœa, the most common and the most important seat of the leucorrhœal discharge, is in the highly vescular glandular structure of the canal of the cervix uteri.

3*d.* That from the extensive and all-controlling sympathetic relations of the uterine organs, it is found that any morbid changes in these organs, whether primary or secondary, re-act unfavorably, and with great certainty, upon the general health, especially upon the digestive organs and the nervous system; and *mutatis mutandis*, the same principle holds true of primarily unhealthy conditions of the nervous system, the digestive organs, etc., as causative of uterine disease.

4*th.* And consequently, that in the curative treatment of any affection that is complicated with any form of uterine disease, it is indispensably necessary to attend to the constitutional relations of such disease, while it is equally important to address suitable remedial agencies directly to the local alterations, or lesions of the uterine organs.

5*th.* That the most extensive and reliable experience of the medical profession has demonstrated the utility and essential importance of attending to the local, as well as the constitutional treatment of those diseases of females attended by discharges; and that to do this properly and efficiently, the highest interests of the patient demand the appropriate use of dioptric instrumental examinations of the seat and nature of the local lesions.

Art. VIII.—*Cases testing the Iodide of Potassium, as an antidote to the injurious effects of Mercury, and corroborative of the experiments of* M. Melsens (read before the Medical Society of the N. Y. Dispensary). By J. W. Corson, M. D., one of the Physicians to Bellevue Hospital, etc., etc.

Case I.—*Remittent Fever; Hepatic Congestion; Anasarca; Recovery.*—Mr.——, æt. 35, trunkmaker, slender, pale, having previously suffered from a chronic cough, suspected to be phthisical, was under my care during a severe attack of bilious remittent fever, in September 1842.

With other febrile symptoms, there was a slight jaundiced hue of

the skin and conjunctiva, a yellow fur upon the tongue, unusual thirst, nausea and irritability of the stomach, highly-colored urine, a teazing, dry cough, unaccompanied by any appreciable lesion of the lungs, but with decided tenderness *over the region of the liver.* He was ordered cooling diaphoretics, warm sponging, and grain and a half doses of calomel with Dover's powder, every four hours, until, more readily than usual, very severe and protracted ptyalism supervened. His recovery was tedious, and some very free lay discussions on the treatment of the "Calomel Doctor," gave the case unusual interest. Under the use of quinine and bitter infusions, he rallied feebly, but the hepatic tenderness and jaundice remained for some time, and he finally relapsed with extensive anasarca.

In consultation with a medical friend, it was decided not to push the mercurial farther in an apparently strumous habit, but to trust to counter-irritation, and the exhibition of five grains of the iodide of potassium three times a day. The dropsical effusion soon after disappeared; the remedy was continued for several weeks after, till recovery was perfect.

He has since enjoyed improved health, and has suffered no permanent ill effects from the mercurial treatment.

CASE II.—*Obstructive Ulceration of Throat; severe Ptyalism; Tedious Recovery.*—Miss——, æt. 30, dressmaker, of good character, pale, delicate, and of a strumous family, was placed under my care in Nov., 1843, with extensive ulceration of the throat of two years' standing, involving principally the pharynx and upper portion of the œsophagus, and so severe as to prevent her from swallowing solids, for months, and to limit her to soups and liquid food, and incapacitate her, and confine her to her room. Her appetite was poor; the menses were suppressed, and her spirits prostrated with the apathy of despair.

The fauces were red and extensively ulcerated; the teeth quite blackened, to use her expression, with the "powerful medicine" of my predecessors, and the profuse flow of saliva, the fetid breath and spongy gums, indicated that she was suffering from mercurial ptyalism. A strong solution of the nitrate of silver, acid gargles, and the usual topical remedies had already been faithfully tried.

With slight hopes I kept her upon five grains of the iodide of potassium three times a day, with rich broths and gentle exercise, and after several weeks, slight amendment was perceived. The granulations very slowly healed; her strength returned, and she was at last enabled to take long walks, and swallow and digest beef-steak and other solid food. She continued to take the iodide of potassium, in five-grain doses,

three times a day, with slow, but visible improvement, and with little intermission for *eleven months.*

She entirely recovered; resumed her occupation, and till lost sight of some three years since, continued in good health, suffering none of the constitutional ill effects of mercury.

Case III.—*Pleuritic Effusion; Displacement of the Heart; Gradual Recovery.*—Mr. ———, æt. 36, shoedealer, slender, and of a scrofulous family, having been exposed to cold, was seized in December, 1851, with excruciating pain in the left side of the chest, accompanied with great difficulty of breathing, dry cough, fever, and a hard, bounding pulse.

In spite of prompt bleeding from the arm to twenty ounces, and full doses of antimony, followed by cupping and hydragogue purgatives, and blisters to the side, effusion soon supervened, accompanied by the usual physical signs, viz., want of motion, bulging, flattened intercostal spaces, dulness on percussion, and absent respiration.

The heart was finally pushed to right of the sternum.

Notwithstanding the strumous taint, I was at length obliged to resort to a mercurial course, and trust to correct its injurious effects by the subsequent use of the iodide of potassium. With free mercurial ptyalism, absorption soon commenced. It was continued for many weeks, and with the use of a succession of blisters and the iodide of potassium with the extract of conium till the following spring, the effusion was completely absorbed, the heart returned to its normal position, and the patient escaped with slight contraction of the side affected. He continues in his usual good health.

Case IV.—*Suffocative Laryngitis; Ptyalism; Suppression of Urine; Recovery.*—Mrs. ———, æt. 40, respectable, of good constitution, having being exposed to cold, was seized in October last with chilliness, succeeded by hoarseness, cough, sense of constriction, tense quick pulse and fever, which increased, till in a few hours the face grew dusky, the features anxious, and she seemed ready to suffocate with acute laryngitis.

It was necessary to be in constant attendance upon her, and I resorted promptly to emetics, leeches to the top of the sternum, with antimonials, warm inhalations, and three grains of calomel and five of Dover's powder every three hours, till the breathing grew easier, the pulse softer, and the face more tranquil. Two days after she began to flag a little, the pulse grew small and soft, and she had turns of faintness, accompanied by a sort of hysterical panting and choking, evidently nervous and spasmodic, which were relieved by draughts of carbonate ammonia, with tinct. valerian and hyoscyamus. In a few hours the

breath grew fetid, the gums tender, and she was seized with most profuse and painful ptyalism. From this time the dispnœa, cough, and laryngeal symptoms abated, while the prostration and nervousness continued. She was really a most pitiable object. The tongue was largely swollen, and indented in its sides, the cheeks were extensively excoriated and tender, and the saliva ran profusely down the chin. She could neither eat, drink or speak for pain, and conversed by writing on a slate. Even the assurance of a thoughtful consulting medical friend, and my own, that the sore mouth had probably saved her life, seemed small comfort. After trying in vain mild saline purging, opiates, free, ventilation, astringent and sedative gargles, and powdered sulphur, I succeeded in mitigating her sufferings a little by carefully brushing over the ulcerated spots on the tongue and cheeks, with a forty grain solution of the nitrate of silver by means of a camel's-hair brush, coating them immediately after with a brush dipped in olive oil and laudanum. She had been subject for years to turns of dull pain about the kidneys nausea, and excruciating headaches (possibly from the retention of urea), and a very scanty secretion of urine, and this latter symptom became very serious during the present attack. To relieve the ptyalism, and produce a mild diuretic effect, she was ordered five grains of the iodide of potassium in solution with an equal quantity of the extract of taraxacum, and two grains of the extract of conium three times a day. The effect was delightful; the mouth rapidly healed, the urinary secretion increased, the nervous symptoms abated; in a few days she regained her lost strength and appetite, and has been since that period, to use her own expression, "better than she has been for years." As a measure of safety, she continued to take the iodide of potassium for nearly a month.

CASE V.—*Puerperal Fever; Severe Ptyalism; Recovery.*—Mrs. ———, æt. 35, dressmaker, with blue eyes, light strumous complexion, of a phthisical family, and subject to chronic cough, was safely confined of her fifth child by a rapid, easy labor, early in January last. The after pains were rather severe, but she did otherwise well till the evening of the sixth day, when I was suddenly summoned to relieve a somewhat severe abdominal pain, tenderness on pressure, with headache and some fever, which had been preceded by chilliness; the tongue being moist, the lochia and milk still free, and the pulse not much accelerated. She was not bled, but simply ordered warm fomentations, and fifteen grains each of calomel and Dover's powder, to be followed by a purge of castor oil, and oil of turpentine in the morning. She slept tolerably, and the purgative operated very freely, producing some temporary relief. She had suffered a teazing cough some time, had recently lost two sisters with

consumption, and I was unwilling to salivate. Sinapisms were freely applied and she was directed to take half a teaspoonful of oil of turpentine in sweetened mucilage, with two and a half grain doses of opium every four hours. The uterus being enlarged and tender, and some umbilical pain remaining next day, eight leeches were applied. On the fourth day of the attack all the symptoms became aggravated; the lochia ceased, the milk rapidly diminished, the pulse rose to 130, and became small and wiry; the features anxious and sharp, the pain and tenderness were more acute. She was immediately bled from a large orifice twenty ounces, and put upon two and a half grains each of calomel and opium every three hours.

The pulse grew softer and slower, the features more calm, and the pain soon ceased to disturb. She started in a sort of stupor occasionally during the night, and muttered a few incoherent sentences, apparently from the full opiate, but otherwise was much quieter. She continued thus until the second day after, when profuse ptyalism occurred, all her symptoms improved, and her entire attention was diverted to her mouth. I lost no time in resorting to the local treatment mentioned in the former case; penciled the ulcered tongue and cheeks with a forty grain solution of the nitrate of silver followed immediately with olive oil, washing the mouth at intervals with a weak gargle of extract of conium, and tannin and honey dissolved in water. I commenced immediately, as a *remedy for the ptyalism* and an antidote to the dreaded constitutional effects of mercury in a strumous habit, to give five grains of the iodide of potassium with two grains of the extract of conium three times a day. She rapidly recovered, the teazing cough ceased, and she continued the medicine for a few weeks accompanied by porter and beef-steak, which she discussed with a ferocious appetite, and soon permanently regained her lost strength.

Remarks.—In common, doubtless with many others, I have for years been in the habit, especially in scrofulous constitutions, of always terminating a mercurial course by the protracted administration of the iodide of potassium, both as a remedy for the immediate effects of mercury, and as a prophylactic against its future injurious consequences. And I have gradually ventured to be far less apprehensive of the ill effects of the mercurials in cachectic habits when judiciously managed, than formerly.

These views came as quiet practical teachings from the bedside. But the peculiar mode of action by which the iodide of potassium neutralized the slow poison of mercury in the system, was to me, as doubtless to others, a mystery, till the recent clear and satisfactory experiments of M. Melsens, of Paris, explained the whole matter. The observations

of M. Melsens were first embodied in a remarkably interesting paper, published not long since in the *Annales de Chimie et de Phisique*, and recently translated by Dr. Budd, of Bristol, and republished in the *British and Foreign Medico-Chirurgical Review* for January, 1853. Those who are not already familiar with it we would refer to the original paper, as a master-piece of medical observation, strengthening the patient deductions from the experience of the bedside, by the most rigid chemical analysis.

In the hope of directing more attention to these researches and somewhat confirming them, we have selected the above cases out of many others that might have been quoted. Some of them have the advantage of having been watched for several years, during which time they have exhibited no wandering pains, or undue sensitiveness to cold, and no cachectic appearance or other signs of injury from the constitutional effects of mercury. Four out of the five cases had legitimate evidence of scrofulous or tuberculous taint, and were, therefore, specially liable to injury, and better proofs of the efficacy of the antidote. In the single exception, too, *case No. IV.* there was a chronic renal affection, and it is well known that in Bright's disease, and other chronic difficulties of the kidney, mercury is particularly apt to act at times with fearful violence. The suffering in this case from ptyalism, was most severe of all, and the prostration amounted almost to that of mercurial erethism.

Yet with these constitutional tendencies to hinder us in the administration, they all belonged to that desperate class of cases in which, from change of structure, or effusion of lymph or serum, life itself was immediately jeopardized, and apparently could only be saved by the resolvent effects of mercury. The simple enumeration of the cases would tell the practical physician that, when menacing life, he had, in duty to his patient, no other choice. They consist, it will be recollected, of extensive dropsy with hepatic congestion, threatening obstructive inflammation of the throat, immense pleuritic effusion, suffocative laryngitis, and severe puerperal peritonitis. In all these cases mercury appeared the *only remedy* capable of meeting the exigency. It succeeded most happily; and through the singular, and as we firmly believe efficient, counteracting agency of the iodide of potassium, in a class of subjects most liable to injury, it left no sting behind. How the iodide of potassium acts in thus neutralizing the slow poison of mercury, the varied experiments of M. Melsens seem clearly to explain.

He lays it down as an admitted principle, proved by the well-known fact, that years afterward, persons who have once freely taken mercury find gold coins discolored by the mercurial in the perspiration of their bodies, and that mercury has been sometimes detected in the body after

death; *that mercury as well as lead combines with the animal tissues*, and remains, so to speak, fixed in the system for years. Secondly, that in the body as well as out of the body, the iodide of potassium acts as a *powerful solvent to the compounds of mercury and lead; disengages them readily from the animal tissues*, and drains them off through the kidneys. Many ingenious chemical and clinical experiments are given to establish these propositions. M. Melsens first proved that the iodide of potassium passes off principally in the urine, by taking large quantities himself, and then analyzing the different secretions of the body. The fæces contained scarcely a trace, while the urine was loaded with it. It passes off through the kidneys with great rapidity. A person took 77 grains of the iodide of potassium, and in a few minutes the urine was charged with it. The compounds of mercury and lead, with the iodide of potassium, pass off by the kidneys in the same way.

An extraordinary cure of a looking-glass maker, with severe mercurial paralysis, is given, in which the patient took the iodide of potassium in very large doses for several months, and repeatedly during this period the iodide of mercury was detected in the urine by chemical tests.

The great efficacy of the iodide of potassium as an antidote to the slow poison of lead and mercury, were proved by M. Melsens, by experiments upon several dogs, which were fed with the carbonate and sulphate of lead till paralyzed, emaciated, and nearly dead, and then in a short time restored to health and flesh by the administration of the iodide of potassium.

Three cases of severe lead paralysis among house-painters and workers in lead, were entirely cured, and a fourth greatly relieved by the same remedy. In five cases of mercurial paralysis and severe suffering among gilders and workers in quicksilver, the iodide of potassium, in a few weeks, accomplished great relief, or a perfect cure.

It happened in some cases that the poison seemed to be liberated so rapidly by the remedy that it was badly borne. Sometimes profuse re-salivation was the consequence. I had under my own care a gilder, aged 65, a few weeks since, suffering from mercurial tremors and paralysis, in whom eight grains of the iodide of potassium, three times a day, produced distressing ptyalism, and so added to his sufferings that he refused to continue the remedy.

Does the iodide of potassium ever salivate, except by *liberating* mercury?

We believe not. In the few cases in which salivation occurs from preparations of iodine, we think it will always be discovered that mercurials have at some previous time, in the patient's life, been taken.

From the experiments of M. Melsens, it appears that the iodide of

potassium, when taken with mercurials, sometimes acts as a preventive to injury, from the latter. We have for years been in the habit in strumous, syphilitic cases, of giving blue pill at night, and the iodide of potassium by day. Or we have *neutralized*, as we imagined the too severe effects of the prot. iodide of mercury, in syphilitic and scrofulous throat affections, by combining with it the iodide of potassium. We have very lately witnessed excellent effects from this combination, in a case of tubercular syphilitic eruption.

Might not the exhibition of the iodide of potassium, in seasons of special exposure, be a protection to painters and workmen in lead, against lead colic, and paralysis?

It is curious to notice what immense quantities of the iodide of potassium may be often safely borne. M. Melsens took himself, for two months, from half a drachm to a drachm and a half per day, or more than two thousand grains in the whole period, without any inconvenience, except temporary coryza, and a few pimples, and with a decided increase of appetite. One of the most severe cases of mercurial paralysis, related as cured by him, took 2,314 grains of the iodide of potassium, between the 21st of March and the 23d of June.

Of the cases of our own given above, No. 2 took five grains, three times a day, for eleven months, with the greatest benefit. M. Melsens recommends, in cases of mercurial, or lead poisoning, to begin with fifteen grains in solution, three times a day, and to increase the dose as the patient will bear it.

Dr. Budd thinks such large doses require two conditions—*First*, to be given on an empty stomach; and *secondly*, in a state of large dilution.

The cases we have narrated above seem to prove, that in milder forms where mercurial paralysis is not induced, and the system is not highly charged with the noxious mineral; smaller doses of the iodide of potassium, if continued sufficiently long, are highly efficacious.

In conclusion, these researches of M. Melsens explain, we think, why the iodide of potassium is so serviceable in certain broken-down syphilitic patients, in whom the quantity of mercurials previously taken, finally form an important element in their disease. We have not sufficiently tested the iodide of potassium in lead disease, to speak, as yet, with confidence from personal reference. We may, however, as a supplement to this paper, at a future period, report a few cases of lead paralysis, now under treatment, and hope, in the mean time, to promote the principal object of this paper, by eliciting from the profession further observations on this important subject, and exciting a deeper interest in the original memoir, from which we have so freely quoted.

PART SECOND.

CRITICAL ANALYSIS.

ART. IX.—*The Action of Medicines in the System; or, "On the mode in which Therapeutic Agents introduced into the Stomach, produce their peculiar effects on the animal economy," &c.* By FREDERICK WILLIAM HEADLAND, B. A., M. R. C. S., etc., Philadelphia: Lindsay & Blakiston, 1853, pp. 360.

WE hail, with pleasure, any thing which will give us more definite notions of the action of medicines in the system, for, upon the clearness of our views of this subject, in a measure, depends the success of our practice. The work before us is the Prize Essay to which the Medical Society of London awarded the Fothergillian Gold Medal for 1852. The subject propounded by the Society, to those who wrote for the prize, is indicated in the title.

The author divides his essay into four principal chapters:—The first Introductory; the second, treating of the more important Classifications of Medicines, and Opinions of authors respecting their Action: the third and main chapter, treating of the General Modes of Action of Therapeutic Agents introduced into the Stomach; and the fourth, on the Action of some of the more important Medicines in particular.

In the introductory chapter, the author sets forth the extent of the subject, its importance, and the manner in which it should be examined, and also propounds the scheme or arrangement of the essay.

He first takes notice briefly of the two systems of medical treatment, the Empirical and the Rational. As to the latter, he remarks: "For the proper perfection of medicine, as a rational science, two things are in the main needed,—the first is a right understanding of the causes and symptoms of disease; the second, a correct knowledge of the action of medicines. Should our acquaintance with these two subjects be complete, we should be able to do all that man could, by any possibility

effect in the alleviation of human suffering." Through the rapid advancement of the departments of diagnosis and nosology, this sublime problem is being unravelled at one end, "but the other end of our medical system is in a less satisfactory conidtion;" that is to say, the condition is less satisfactory to those who demand positive demonstration, rather than ingenious speculation, in relation to the action of medicines. While some have boldly essayed to cut the gordian knot, it must still be confessed that, with respect to this particular department of inquiry, we are not so much wiser, after all, than our fathers. But it is hoped that those who feel the difficulties and importance of the subject, will bend their energies to the solution of this most practical and interesting problem; when, instead of our present indecision and uncertainty on many points, we shall find ourselves eminently qualified to wage the conflict with disease, being skilled in that science, whose name bespeaks its peculiar importance,—the Science of Therapeutics.

Of the difficulties of this subject, the author fully advertises us, and offers them as a partial excuse for "the manifest insufficiency of the sketch;" and he frankly admits that, when perfectly in the dark, as to the operation of a medicine, we should rest content (for the present) with declaring the *result* of that operation, which, of itself, will be of great use to us.

Dr. Headland thinks "it impossible to overrate the importance of *exact precision of language and thought*, in scientific details, and in the deduction of conclusions from them. A subject so interesting as this, requires to be treated in a logical way. Facts, when ascertained, should be ranged together and compared, and exact inferences made, *without ever straining a point.* And when we are inclined to hazard a theory, that is barely supported, we should take care to state it as a theory, and not bring it forward as a truth.

In order to arrive at this desirable clearness and precision, the author has arranged his views in distinct propositions, and has attempted "to prove each of them separately, as if it were a theorem in geometry, sometimes dividing it into a number of minor propositions, which, taken together, imply the orginal one, and which have to be severally discussed." He acknowledges having, in certain instances, "indulged in speculation and hypothesis," but has taken especial care to state that such explanations are only probable, and very far from determined.

It would be interesting, but in this connection not very profitable, to present a particular analysis of the second chapter on the more important classification of remedies. Nearly all the facts and opinions

stated under this head, are accessible to every physician who has a respectable library. As we wish to devote our limited space mainly to the consideration of the principal topics discussed in the third chapter, we shall content ourselves in our notice of this part of the work, by quoting briefly his remarks on classification.

A classification of remedies presupposes a set of theories concerning either a primary action or their general result, and is, in fact, identical with them. The foundation of such an arrangement depends upon the necessity of considering in groups, each possessed of some common character, in order that their various properties may be simplified and admit of being compared.

In a classification we do not so much consider the peculiarities of single remedies as the points in which large numbers agree together. These points of resemblance we generally find to be of the most importance. I have to consider three sets of authors. The first set treat of the general and ultimate effect of medicine on the system, and classify medicines accordingly. A second set of writers have arranged therapeutical agents according to the organ or part of the body to which their action is especially directed. Neither of these deal with the mode in which medicines act as the basis of classification. A third set of writers have attempted in various ways to explain the modes of operation of medicines. They have laid down general rules about those operations, and have constructed more or less plausible theories on the subject. Some few have classified remedies on this plan. Now, with these theories I am more particularly concerned, as they trench immediately on the subject of this essay.

We come now to examine the main subject of the production before us, viz., "The general modes of action of therapeutic agents introduced into the stomach."

The doctrines which the author proposed in the discussion of this subject, are laid down in the form of ten Propositions. "The first four of these concern the general conduct of medicines after their introduction into the stomach, and before their passage into the blood." The remaining six treat of the subsequent behavior of those medicines which pass into the blood and fluids of the body. Of these, the fifth specifies their general course; the sixth states that they may undergo certain changes in the system; and the concluding one treats of the various modes in which these agents may operate in the cure of disease.

PROPOSITION I.—*That the great majority of medicines must obtain entry into the blood or internal fluids of the body before their action can be manifested.*

By the "internal fluids" he means the chyle and "the serous fluid which exists in the interstices of the tissues throughout the body." The

question involved in this first proposition is " whether a medicine acts by mere contact with the stomach, its influence being propagated to distant parts by means of nerves, or by passage thence into the system, acting through the medium of the blood and the fluids." The author affirms that it is after the manner last mentioned, and sustains his proposition by four considerations.

1. A medicine introduced into the system elsewhere acts in the same way as when introduced into the stomach.
2. The continuity of nerve is not necessary for the propagation of such effects, but *vascular connection is necessary.*
3. The circulation of the blood is sufficiently quick to account even for the operation of those poisons which act most rapidly by influencing the nerve-centres.
4. The great majority of medicines have been detected in the blood, and found in the secretions formed out of it.

PROPOSITION II.—*That a great majority of medicines are capable of solution in the gastric or intestinal secretions, and pass without material change, by a process of absorption, through the coats of the stomach and intestines, to enter the capillaries of the portal system of veins.*

The nature of the gastric juice is favorable to the solution of medicinal substances. The researches of chemists, and especially those of Liebig and Lehman, lead us to the opinion that the acid of the gastric juice is *lactic* rather than hydrochloric, as has, until recently, been supposed. The chyme is mainly absorbed by the mucous coat and capillaries of the stomach. The lacteals appear to be a special arrangement for the absorption of fatty substances. It seems that the lacteals are not, ordinarily, at all engaged in the absorption of medicinal substances. This conclusion has been arrived at by the late researches of Bernard as well as by the experiments and observations of Majendie, Tiedemann and Gmelin. The bile and pancreatic juice may be engaged in reducing to a soluble state certain medicines that are not soluble in the gastric secretions, that they may then be absorbed by the veins of the intestinal canal.

The laws of *endosmotic absorption* are specially noticed, viz.:—1st, the influence of density of fluids; 2d, their attraction for the intervening membrane; 3d, the affinity of fluids for each other; 4th, the motion of the fluid on one side promoting the passage through that on the other, because it is carried off as fast as it permeates the membrane; and 5th, any pressure on the fluid on one side of the membrane has a powerful influence in determining the passage of the current from that side. The fourth and fifth conditions of absorption by endosmosis are considered of great importance.

Dr. Headland combats the common endosmotic theory of the action of saline purgatives. By direct experiments he has shown the erroneous position of Poisseuille, and especially the views of Pereira and Dr. Golding Bird, the latter of whom affirms that a solution containing less than five per cent. of saline matter constitutes a diuretic, but when more than that amount a cathartic. In other words, the specific gravity of a saline cathartic must be greater than that of the serum of the blood, and of a saline diuretic, the specific gravity must be less than that of the serum of the blood. The Seidlitz water and sea water are both purgative, and are both of lower density than the serum of the blood. It is stated by Dr. Carpenter that if a ligature is applied below the pylorus of an animal, and sulphate of magnesia introduced into the stomach, purging will be the result, which could only occur from absorption into the circulating mass. Our own experience has often contradicted the endosmotic theory, and especially the use of sulphate of magnesia and cream of tartar. The kidneys cannot, probably, excrete beyond a certain amount of the saline solution, the remainder being eliminated by the bowels.

The metallic carbonates and oxides are all soluble in the free (lactic) acid of the stomach, especially when they are in the hydrated form. Mineral bodies insoluble in water and in acid, may be soluble in alkalies. Such bodies pass into the duodenum, where they meet with the alkaline secretions of the liver and pancreas, and are dissolved. Sulphur is an example. It is taken into the blood, and there found in combination with the alkalies, as a sulphuret or sulphate. It is possible that iodine, bromine, and some of the hydrated metallic oxides may enter the blood in the same way. The vegetable alkaloids themselves are, in general, almost insoluble in water, but in their natural state they occur in combination with acids, forming many soluble salts. Resinous medicines are dissolved and fitted for absorption by the alkalies of the intestinal fluids. The same is true of certain neutral, acrid principles, as cantharadin, piperin, &c. The fats and fixed oils are emulsified by the bile and pancreatic juice, and rendered fit for absorption by the lacteals.

PROPOSITION III.—*That those medicines which are completely insoluble in water and in the gastric and intestinal juices cannot gain entrance into the circulation.*

This doctrine, that a perfectly insoluble substance cannot pass through the homogeneous wall of capillary or absorbent vessels, is generally admitted by physiologists, yet it has recently been attacked by Prof. Œsterlen, of Dorpat, who infers, from his experiments with charcoal given to dogs, in whose blood he afterwards, with the microscope, detected mi-

nute particles of charcoal, that any other insoluble substance can be absorbed. Our author casts a doubt upon the accuracy of Œsterlen's observations, by saying that the test of the presence of particles of charcoal in the blood should have been chemical. Dr. Headland gives the details of several careful experiments, the results of which are in direct opposition to the views of Œsterlen.

Proposition IV.—*That some few remedial agents act locally on the mucous surface, either before absorption, or without being absorbed at all. That they are chiefly as follows:*—(A.) *Irritant Emetics;* (B.) *Stomach anæsthetics;* (C.) *Irritant cathartics.*

(A.) The sulphates of copper and zinc, common salt, mustard and horse-radish are given as examples of *irritant emetics.* Unlike specific emetics, they produce but little nausea, but by contact and irritation cause a large quantity of gastric juice to be poured out, which, together with the emetic and any contents of the stomach, are rejected.

(B.) The action of *stomach anæsthetics* depends upon their local contact, although they may afterwards be absorbed. Hydrocyanic acid, creosote and nitrate of bismuth, are instances of this class of remedies. The nitrate of bismuth our author declares to be "very insoluble." This is in accordance with the views of Monueret, who published a memoir a few years ago on the subject. He maintains with Headland that it exerts only a local influence, and no general effect; that it is a sedative to the intestinal mucous membrane. Recently, however, Dr. Lussana, of Italy, has been experimenting with bismuth, and he asserts as the result of his researches, that it certainly has a *general* action, and that it is absorbed into the system. He affirms (on what grounds we are not informed) that when given largely in cases of tuberculous and mesenteric diarrhœa, that "a portion of the dose varying with the amount of acid in the stomach and intestines, was dissolved and absorbed; but any of the dissolved portion on meeting with an excess of alkaline chlorides in the intestines was again precipitated. For this reason it never appears in the urine, being precipitated by the alkaline chlorides of the blood-serum. Its passage into the blood gives rise to colliquative and scorbutic phenomena." He goes on to remark that to "avoid this noxious general action, and at the same time avail ourselves of the mechanical and local healing power of this medicine, we should previously give some antacid, as, for instance, magnesia usta, which would chemically prevent its solution and assimilation."

(C.) *Irritant cathartics.* The specific cathartics, like the specific emetics, are first absorbed, but the former are true eliminatives. "They operate by passing out of the blood through the intestinal glands. * * * They are most commonly expelled by the glands of this sur-

face, somewhere in the lower or fecal portion of the inestinal canal, which is more engaged in secretion, but less active in absorption. Castor oil, croton oil, rhubarb, aloes, and senna, are examples of specific cathartics. Some of the resinous specific cathartics may act at the same time as irritant cathartics. On the same principle that some errhines increase the mucus secretion of the nose, the irritant cathartics increase the fecal discharge of the bowels. Mucura pruriens and tin powder are examples of simple irritant cathartics.

PROPOSITION V.—*That the medicine, when in the blood, must permeate the mass of the circulation, so far as may be required to reach the parts on which it tends to act. That there are two possible exceptions to this rule:* 1. *The production of sensation or pain at a distant point.* 2. *The production of muscular contraction at a distant point.*

The *topical* effects of "nerve medicines," as morphia, hydrocyanic acid, aconite, &c., render it probable that this class of remedies reach the part affected when absorbed from the stomach. The action of certain medicines on certain glands is another argument in favor of the truth of this proposition.

The rule of local access, however, is not universal, for there are many examples of the effect of a remedy on a distant point, propagated according to the laws of *reflex nervous action.*

PROPOSITION VI.—*That while in the blood the medicine may undergo change, which in some cases may, in others may not, affect its influence. These changes may be:* 1, *of combination;* 2, *of reconstruction;* 3, *of decomposition.*

Changes of combination. There is a slight excess of alkali in the blood, &c., slight excess of blood in the urine. The acids and alkalies, given as medicines, do not produce much excess of either in the blood, as they are generally soon neutralized and reduced to salts. But this neutralization does not destroy their influence; for being neutralized "they diminish in the blood and in the system generally the quantity of basic or of acid matter, and thus tend to alter the reaction of the secretions." It is easier to render the urine alkaline than to make it acid, for in the first place an acid may pass through other glands than the kidneys, and in the next place, "an alkali is not so easily neutralized either before or after absorption, the blood being already more or less alkaline."

But our author protests against the idea that all chemical affinities have free play in the blood. If it were so "all the mineral salts would be precipitated by the free soda in that fluid; acetate of lead would be decomposed by the sulphates; and nitrate of silver would be precipitated by the chlorides."

Changes of reconstruction. "The elements of a body may be disturbed in the system, and combined together anew, without any material alteration of its properties." Thus, tannic acid acquiring oxygen changes into gallic; benzoic and cinnamic acids are converted into hippuric acid, and pass out in the urine.

Changes of decomposition. The most important change to which *organic* substances are liable in the blood is *oxidation.* "It always takes place with the starchy elements of the food." By this oxidation Wöhler has proved that the alkaline salts, with vegetable acids, are changed in the blood into the alkaline carbonates. From being first neutral, they become now alkaline in their reaction, and affect the urine the same way as the free alkalies.

PROPOSITION VII.—*That a first class of medicines, called Hæmatics, act while in the blood which they influence. That their action is permanent.*

(1.) *That of these, some, called Restoratives, act by supplying, or causing to be supplied, a material wanting, and may remain in the blood.*

(2.) *That others, called Catalytics, act so as to counteract a morbid material, or process, and must pass out of the body.*

This proposition contains the chief subject of discussion in the work before us. The author here reveals his strong humoral tendencies.

Notwithstanding most medical writers have been backward in admitting this class of blood medicines into their classifications, they have still been obliged to profess a belief in the existence of certain remedies, which they have called "alteratives," and which it is allowed alter the condition of the blood. Dr. Headland observes of these medicines, that "some of them tend in the end to act upon the nerves, or on the glands, not merely indirectly, but by bodily contact. But whatever their subsequent action, they exert a primary and apparent influence on the blood itself. A little reflection will convince us that these remedies are more efficient than any others that can be selected out of the armory of physic."

The diseases in which hæmatics are used all originate in the blood however they may manifest themselves. *Restorative* hæmatics are administered to supply a deficiency, which may exist in the normal constituents of the blood. Iron may be mentioned as an example, which we give in anemia to restore the proper quantity of hæmatozin of the blood corpuscles, which in this disease is deficient.

The *Catalytics* are foreign to the blood, and only remain in it long enough to counteract a morbid action, and are then excreted.

Some medicines come under both heads, acting different ways in different cases. Thus potash may be a restorative in rheumatism, but a catalytic in scrofula.

The author classifies his restoratives (restaurantia) in six orders:—1, Aliment; 2, Acida; 3, Alkalia; 4, Tonica; 5, Chalybeata; 6, Solventia.

In our notice of these orders we shall be compelled to be brief, and shall, therefore, only touch upon those topics in which new and important truths are developed, or where the principles evolved admit of frequent application in practice.

Under the head of aliments he thus speaks of the dietetics of diabetes:—"In diabetes mellitus, when a large quantity of sugar is secreted in the urine, it is the common practice to confine the patient to a diet of meat and gluten bread. This latter is a tough, horny material, prepared from flour, from which the starch have been separated by washing. It is thought that if no starch be given, no sugar can be formed; but it appears that, though both the amount of urine and the quantity of sugar in it are diminished by this plan, yet the latter does not wholly disappear. This may be easily accounted for, if we admit that sugar may be formed from albumen. Water should be given sparingly in this disease, for the more the patient drinks the more urine he passes, *and all of the same high specific gravity.*

"Fat may be given in diabetes, for it is not proved that it can be converted into sugar: but as the contrary seems to be the case with albumen, and it being impossible to withhold this, the cure of the patient by mere dieting may be considered almost hopeless."

On the *modus operandi* of cod-liver oil in the cure of phthisis, he observes: "Liebig's idea that there is in phthisis an excess of oxygen in the system, would, if sufficiently supported, serve to explain its action when considered simply as an oil. This oxygen would consume the carbon and hydrogen in the food, and prevent the accumulation of fat. A supply of oil might then serve to restore this fat, and afford a sufficient pabulum to the devouring element."

When treating the order of Acids, he remarks: "The use of mineral acids in assisting a weak digestion, admits of a simple explanation. For whatever notion we adopt as to the composition of the gastric juice, it is certain that it contains an acid in excess. Now an acid medicine would set free in the blood more of this acid which it is the business of the stomach to furnish, and thus prove useful in that kind of dyspepsia which depends upon the failure of the gastric secretion. Hydrochloric acid has been particularly recommended by those who consider it to be the acid normally secreted by the stomach."

His remarks on the action of *Quina*, which he takes as a type of tonics, are interesting.

I consider then that quina is not in the first instance a neurotic medicine; and for the following reasons:—The action of other nerve medicines are distinguished by the following signs. It is quick, and very rapidly follows the administration of a substance. It is transient, and does not endure. It requires no particular state, but takes place in health: thus alcohol stimulates and intoxicates both healthy and sickly, and digitalis would subdue a Hercules; most neurotics are capable of acting without entry into the blood at large; mere contact with the nerves, as when they are applied externally, being sufficient for their action on those nerves.

Now, is the primary action of tonics distinguished by the above signs? Are they quick and sudden in their action? Is their effect transitory? Is it evidenced in health as well as disease? Do they act on the superficial nerves, when applied to them? In each case the answer must be negative.

After showing that "the disorders in which tonics are used are blood-diseases," he goes on to discuss the question whether there is any analogy between quina and any of the normal elements of the blood. We are told that Liebig has shown that for the most part the elements of the bile re-enter the blood after passing into the intestine, scarcely more than the coloring matter being excreted with the feces. He has found that if an enema of bile be injected into the rectum, it is absorbed there, and does not pass out into the urine. One of the elements of the bile is a neutral substance called *Taurina*. "Bile is bitter to the taste; and ox gall, or the bile of an ox, has been found when administered as a medicine to have an action which resembles that of tonics. It appears that both the bitterness and tonic action reside in the *Taurine*. M. Liebig has pointed out an important chemical resemblance between this taurine and the vegetable alkaloids. Of these he has singled out caffeine, the peculiar principle of tea and coffee, as most analogous to the biliary product."

The analysis of Liebig is confirmed by that of Löwig. "Without theorizing at all on the subject, it may readily be demonstrated that, with the existence in the blood of such a material as taurine, we cannot say that we have not in that fluid an analogue to substances like quinine. Taurine is soluble in water and crystallizable; is chemically analogous to the tonic bitter principles; and contains the same four elements as quina. If necessary, this similarity could be exchanged for identity, and quina could be formed into taurine in the blood. It is ascertained that many, if not all, of the diseases in which quina and its

kindred medicines are found to be of use, are connected with derangement of the secretory function of the liver."

By keeping in mind this chemical analogy between quina and taurine, and that the diseases which the former tends to cure depend on deranged hepatic functions, are we not encouraged to believe that these diseases are cured by the actual formation of taurine in the blood, or by supplying its place in the blood? "It is just possible that the presence in the blood of this bile-product, the supply of which has been cut off by the hepatic disease, might have prevented the continual action of the ague poison. If this connection between tonics and the bile were actually established, then we should be able to explain a matter which would otherwise seem difficult to understand;—how it is that small doses of mercury may sometimes act as tonics"—perhaps indirectly tonic by restoring to the blood the natural tonic principle of the bile.

Catalytics.—The following are the propositions which our author lays down in reference to the operation of this class of remedies: "1, That they act in the blood, and that their effect is permanent; 2, That each of itself tends to work out a peculiar operation in the blood; 3, That the diseases in which they are used depend on certain morbid materials or actions in the blood; 4, That the result of the action of a catalytic medicine is in some way to neutralize or counteract some one or more of these morbid processes; 5, That these medicines are all unnatural to the blood, and must at length pass out of the system."

After discussing the manner in which these remedies should be classified, and the difficulties attending it, he asks: "Does it not seem better to confess our ignorance, and to say that all we know for certain is, that these remedies have the power of antagonizing certain diseases?" Hence, according to his view of their action in various diseases we have this classification;—1, Antiphlogistica; 2, Antisyphilitica; 3, Antiscrofulosa; 4, Antiarthritica; 5, Antiscorbutica; 6, Antiperiodica; 7, Anticonvulsiva; 8, Antisquamosa.

Of the first catalytic order he considers antimony and mercury to be the most powerful. The former when given in large doses has a neurotic action on the heart, and by diminishing the impulse on the inflamed parts or on the vascular system generally, promotes absorption and resolution. Blood-letting produces the same action, but in an inverse mode. Antimony diminishes the pressure on the vessels by weakening the force of the heart; blood-letting weakens the force of the heart by diminishing the pressure on the blood-vessels.

Passing over the other orders enumerated in the list of catalytics, which, though important, our limits do not allow us to discuss, we come to:—

PROPOSITION VIII.—*That a second class of medicines, called Neurotics, act by passing from the blood to the nerves or nerve centres, which they influence.*

1. *That of these, some, called Stimulants, act so as to exalt nervous force in general or in particular.*

2. *That others, called Narcotics, act so as first to exalt nervous force and then to depress it; and have also a special influence upon the intellectual part of the brain.*

3. *That others again, called Sedatives, act so as to depress nervous force, in general or particular.*

We will not stop to analyze what we think the author properly terms his "vague suggestions as to the ultimate *modus operandi* of neurotics."

The author notices the distinction between *nervous forces* and *vital force*. "The former may be very much increased as in high inflammatory fever, without a corresponding increase of the latter. The advantage of a stimulant is regulated by this rule. When there is a failure, no stimulant will serve to prolong life, for it cannot communicate fresh vital power. But there may be no such failure of vital energy, and yet a sudden or accidental deficiency of nervous force may serve to peril the continuance of health, or even the tenure of life. * * * True stimulants are only of use by counteracting the failure of the nervous force which hinders the manifestation of vital strength which is stored up somewhere in the system."

Narcotics are divided into three orders:—I. *Inebriantia*, including alcohol, ethers, chloroform, camphor, tobacco, &c. II. *Somnifera*, as opium, lactuca, hops, and nutmegs. III. *Deliriantia*, as hyoscyamus, belladonna, and stramonium.

The reasons given for this classification are, according to our apprehension, not at all conclusive.

Sedatives are divided into general and special. "General sedatives have a direct action upon all nerves and nerve centres in the body, the result of which is a diminution of nervous force. Special sedatives exert the same depressing action on particular nerves only." Of the action of tea and coffee he thus speaks:—"By diminishing congestion of the brain, tea and coffee have not only the effect of clearing the mind, but in larger quantities of inducing wakefulness. It is not clear that tea, as commonly drank, is ever unwholesome."

We seriously doubt the correctness of the opinion which the writer gives, as to the case of the mental clearness and exhilaration produced by tea and coffee. Simple sedation does not explain it.

Among the *Special Sedatives* he enumerates antimonials, ipecac-

uanha and digitalis. The author concludes that these medicines do not act upon the sympathetic, but upon the vagus nerve and its branches.

PROPOSITION IX.—*That a third class of medicines, called* ASTRINGENTS, *act by passing from the blood to muscular fibre, which they excite to contraction.*

They may induce the contraction of the fibre of voluntary muscles, and thus simulate tonics, but their special and most remarkable action is exerted on the unstriped muscular fibre which exists in the middle coat of arteries, in the walls of capillary vessels, and in the lining of the ducts of glands generally.

PROPOSITION X.—*That a fourth class of medicines,* ELIMINATIVES, *act by passing out of the blood through the glands, which they excite to the performance of their functions.*

The general law of secretion is this: "It is the special office of each gland, or set of glands, to secrete for the blood particular materials, and to pass them out of the body." The eliminatives is divided into six orders, Sialogogues, Expectorants, Cathartics, Cholagogues, Diaphoretics, and Diuretics.

Expectorants and diaphoretics are all more or less uncertain in their action. The reason is this: In the first place the lungs and skin can hardly be said to be common emunctories; there are hardly any solid matters in those secretions which are not also contained in the urine, and commonly excreted by the kidneys. It is only in special cases, or when there is a fault in the normal formation of urine, that the skin is called upon to eliminate materials from the blood. The elimination of effete matters by the bowels, as the result of cathartics, is fully noticed, and is very practical, but as we have already trespassed upon the limits which we had set, we will forbear.

In this notice of Dr. Headland's work, we have attempted to do little more than give the reader the general arrangement of the book, the leading ideas of the author upon the action of medicines, besides pointing out some of the more important and practical items of information, elicited by the discussion of the various topics. There are several interesting subjects, which it might be profitable to notice, did our limits permit. We have wholly omitted the special notions of medicine as contained in the fourth chapter.

As to the general character of the work we may say that it is eminently suggestive. There are, however, many views which are to be taken with some grains of allowance, for, notwithstanding the author's desire to be precise in his language, clear and explicit in his definitions, and free from hypothetical tendencies, he has often failed to maintain

the standard which he had erected. Still, as we have just intimated, the work is full of practical rules and suggestions, which may be of direct service to every practitioner. After its thorough perusal he will come to the bedside of his patient with a better confidence in his administrative powers, and will possess a key for the solution of many processes which were previously obscure. C. G.

ART. X.—*Transactions of the Medical and Physicial Society of Bombay.* No. I. New Series. For the years 1851 and 1852.—Bombay, 1853, pp. 356.

THE Medical and Physical Society of Bombay is composed principally of the Medical Staff attached to the East India Service, although all regularly educated medical men, resident in India, are eligible as ordinary members. The first series of *Transactions* of this Society consists of ten volumes, which were issued between the years 1838 and 1850; and together form a most interesting collection of papers relating to medical matters in India. The publications of this Society, and also of the *Med. and Phys. Soc. of Calcutta*, which has a similar basis of organization, and whose existence extends over a quarter of a century, have done much to correct the false opinions in regard to the diseases of the natives of Eastern tropical climates, which have from time to time been advanced by travellers.

The first number of the new series of the Transactions of the Society of Bombay, now before us, is a volume of marked interest, and sustains the well-formed character of this Society. We shall present briefly an analysis of some of the more interesting papers in this volume.

The first article is a *Report upon the cases of Tetanus in the Jamsetjee Jejeebhoy Hospital*, from Jan., 1845, to Dec., 1851, by J. PEET, Esq., Assistant Surgeon to that hospital. Mr. Peet informs us that during this seven years, one hundred and ninety-five cases of tetanus were admitted into the hospital, exclusive of some seventy or eighty persons who were attacked subsequently to their admission, making the whole number treated during this period, about two hundred and sixty. This is the largest number of cases of tetanus treated in any single hospital in the world. Mr. Peet has carefully analyzed this collection of cases, and the following are his conclusions:—

1st. That the idiopathic form of tetanus is much more frequent in Bombay than in other parts of the world; and that, contrary to the experience of the disease in other places, it is more severe and fatal

than the traumatic species. 2d. That it is often traceable to direct exposures at those seasons during which there are the greatest alternations of temperature. 3d. That of the traumatic form many cases are ushered in by distinct febrile symptoms; but there is not sufficient reason to conclude that this constitutional disturbance is evidence of any more decided state of inflammatory action in the nervous centres than is present in cases where febrile symptoms are altogether absent. Nor would it appear that this febrile state is any indication of the severity or acute nature of the attack. 4th. That there is little doubt there exists in tetanus, as in most other diseases, a period of incubation, but there are no facts to determine the length of time over which this state may extend. 5th. That in many cases the more marked symptoms are preceded by a peculiar expression of face, to which sufficient prominence is not, perhaps, usually given, as a means of detecting the approach of the disease, and that this changed expression may exist for several hours, before any other symptom of tetanus is present. 6th. That no reliance can be placed upon the frequency of the pulse, as evidence of the severity or otherwise of the attack; but the condition of the pulse, in regard to strength, is of much importance. 7th. That hurried respiration and dysphagia almost invariably indicate a fatal termination.

Mr. Peet remarks in regard to the various modes of treatment pursued, "that the result has been nearly the same in each; namely, that of leading to the conviction that there is no one mode of treatment better than another in the management of this disease." He would, however, except from this general statement the assiduous use of nutritious food; this should be considered an essential element in whatever plan is adopted, for on this, rather than the medicines employed, will the favorable termination of the case depend. "The inhalation of ether and chloroform," he says, "has been well tested. That it affords great, and for a time complete relief, there cannot be a question, but it has not appeared to have any influence in preventing, or even delaying, the fatal termination." The majority of cases were treated with preparations of the Indian hemp, but Mr. P. does not consider it superior to other narcotics. The report closes with a table of all the cases treated during this period.

Dr. F. S. Arnott contributes *Cases selectedf rom the Hospital practice of the First Fusiliers, for* 1831. The first is a case of *Malingering* or *Feigned Disease*, with some very interesting remarks in reference to its diagnosis, and the embarrassment of the army surgeon in endeavoring to get his patient convicted. In regard to the first, he says the medical man will observe "that the patient's loud and earnest protestations of suffering are not supported by the appearances of the diseased or injured parts,—that his groans are more loud and piteous than people similarly affected generally emit,—that during an examination he does not always

groan or scream loudest at the proper time,—that his contortions at such times indicate a degree of agony not easily accounted for, and which of themselves, indeed, would cause more pain than the examination he is undergoing,—that instead of assuming a position that would give most ease if he were really suffering, he assumes one that would inevitably add to his distress,—that the constitutional disturbance is not always proportionate to the severity of his sufferings, and the acuteness of his disease; but, on the contrary, that in spite of the agony he endures, his appetite keeps good,—that though he declares he can eat nothing, and can scarcely move from weakness, no great degree of, nor rapid emaciation can be observed; and that the most generally trusted to, and efficacious means of cure or alleviation, never do the slightest good. Dr. Arnott also reports a case of *Hepatic Abscess*, which was punctured andfoll owed by recovery, and an interesting case of *Tumor of the Brain*, which burst and caused death, by effusion at the base of the brain.

A lengthy paper on the *Medical Statistics of European troops in the Bombay Presidency*, by H. Webb, Esq., presents a large mass of facts in regard to the mortality of the different stations, from various diseases.

A Contribution to Dietetics, by A. H. Leith, M. D., is the relation of an experiment in the diet of the native prisoners of the House of Correction. Though the site of the building was unexceptionable, and drainage, ventilation and accommodation was all that could be desired, and the daily amount of labor easy, still there was an unusual degree of sickness, which could not be referred to any of the causes mentioned. Besides the ordinary cases of sickness there were several cases of scurvy, all of which occurred in the prison, and the majority in persons confined from four to six months. On examination it was concluded that the source of evil was the dietary. This was therefore changed by increasing the quantity of food and adding more of a vegetable nature. The improvement in the health of the prisoners was from this time decided, and the mortality reduced the first year from nineteen to two, or from eight per cent. to one per cent. No cases of scurvy occurred subsequently.

The Medical History of the Central Schools, by H. J. Carter, Esq., is a report extending over five years, ending July 1st, 1852. These charity schools are made up of the children of Europeans who have died in service, or retired from age and infirmity. The average half-yearly strength of the schools was 3,303. The tables of admissions to the hospital department show that the first half of January and the last half of December is the healthiest portion of the year, and that as we depart from the first, and approach the latter, various diseases appear. May,

June, July and August are particularly favorable for cutaneous diseases, especially eczema and boils, and the autumnal months for fever. An interesting feature of this history is in relation to an epidemic of measles, which occurred in the spring of 1852. These schools have been subject to such visitations at distant periods. The first case of the present epidemic occurred on the 13th of March, in a girl nine years old, and was very mild; on the 25th nine genuine cases were reported. Measures were taken to prevent the spread of the disease, but before the close of the month 15 new cases occurred; during the month of April 77 cases were admitted, and in May 15, making an aggregate of 117 cases. The number of fatal cases was 9, the cause of death being in most cases a complication of dysentery or pneumonia. Mr. Carter remarks that, "throughout there was a marked drowsiness, and many children seemed to sleep through the attack. Pneumonia, and dysentery or diarrhœa, combined or separate, supervened in several cases, and when either went to any extent, terminated with but one exception, fatally." During these five years there were twelve cases of small-pox, of which three were fatal. Much more attention is now paid to vaccination than formerly. There were seven cases of cholera spasmodica during this period, of which four died; they were all treated "with port wine, quinine, and ammonia, in small doses, frequently repeated, and great attention paid to keeping up the temperature of the body by the use of dry, warm sheets, and blankets, with bottles of hot water placed outside them." The last table given exhibits the comparative mortality of the Central Schools for the last ten years, being five years before, and five years after the establishment of a hospital. The number of deaths for the first period was 76, and for the latter 33, which shows the great importance of a hospital for the cure of the sick.

The next article is *Notes upon some articles of the Materia Medica procured near, and exported from, Aden*, by J. Vaughan, Esq. The author regrets that no scientific botanist has yet directed his especial attention to this part of the world. He says: "Nature in these regions has been lavish in her gifts of precious gums and health-giving herbs and drugs; and a wide field of research is open to any one to add to the present stock of medical knowledge a large amount of important and original facts and observations upon the natural productions of these countries. Beyond the sea-board, scarcely any thing is known of Eastern Africa or Southern Arabia, but the authentic reports of the former country lead to the opinion that it is rich, not only in such productions as coffee, cardamoms, gum arabic, gum mastich, myrrh, frankincense, manna, orchilla, saffron, safflower, and other familiar drugs; but

also that it abounds in a variety of shrubs, plants, and flowers, possessing properties which may, perhaps, eventually prove a great blessing to mankind."

We cannot follow Mr. Vaughan through his interesting history of the individual articles of the Materia Medica which are exported from Aden, and will only call attention to his concluding remark that, "since Aden was declared a free port, the concourse of natives upon the opposite shores of Africa, and from the sea-coast of Southern Arabia, has considerably augmented—a satisfactory proof that trade is increasing; and I am persuaded that, under judicious management, Aden bids fair to become the great commercial mart of this part of the world."

A paper *On Abscess of the Liver*, by M. Stovell, Esq., contains many facts of practical value. During the six years, ending June 1st, 1846, there were admitted into the European General Hospital, 299 cases of hepatitis, of which 251 recovered. Of the abscesses which formed in the liver, six pointed externally, and were opened, and of these, five died; two discharged into the bowels, and both died; one opened into the peritoneum, and proved fatal; and eleven discharged into the bronchi, of which five died, and six recovered. From these statistics it would appear, contrary to the general opinion, that the prognosis is more favorable when the abscess opens into the bronchi, than in any other event. After relating several cases, Mr. Stovell concludes with some interesting remarks upon the practice of opening hepatic abscesses. The first operation in modern times was performed by Dr. Bogue, in 1759, at the Naval Hospital at Negapatam, and the following is his report of the case:—

I forwarded the suppuration with poultices, and on the 13th of July, in the cool of the evening, being about a month after his first complaining of the pain of that side, I laid the tumor open about six inches, and let out near three pints of well-digested matter. I then introduced my hand into the left lobe of the liver, which I found almost entirely suppurated, and containing several honey-comb cavities, the edge of the liver adhering to the peritoneum. He was dispirited on the thoughts of its being opened, but bore the operation better than could be expected in that low state to which he was reduced. I cautiously filled the cavity with dry, soft lint, and gave him a julep, with the tincture of bark to take frequently. Next morning after the operation, there was a large discharge of good matter, and I found one sinu leading obliquely down towards the navel, and another towards the back, each about two inches in length. I laid them both open to the bottom; and these were the only openings I had occasion to make, though I found another sinus leading towards the chest. That day I dressed him as before, and the next day, after having fomented, I threw into the

cavity an injection of barley-water and tincture of myrrh, which I repeated three or four times, until I thought the parts were sufficiently cleansed of matter. * * * In three weeks the wound was not more than an inch deep, and but two inches in length, florid granulations daily forming; and towards the end of August, the parts being almost cicatrized, the patient was sent on board his ship to do duty."

Subsequent writers seem to have merely alluded to the operation, without giving any definite opinions or directions regarding the practice until the appearance of Mr. Annesley's work in 1828 (*Researches into the Causes, Nature, and Treatment of the Diseases of India*), in which we have the subject treated on sound pathological principles. Mr. Annesley gives minute directions, advising that the operation be not delayed when there is a fair prospect of giving exit to the matter; but cautions the operator to be sure that matter has formed, that the tumor is not a collection of bile in the gall-bladder, and finally, that adhesions exist between the liver and abdominal parietes. The tumor may be considered in a proper condition to be opened, when the acute pain has subsided, and it has become "soft and fluctuating at its apex, or with a soft elasticity, and slight lividity or redness of the surface, and somewhat hardened and elevated base, indicating that the purulent matter has found its way to the external covering of the liver at the tumid part, and that the liver has then formed adhesions to the opposite part of the abdominal parietes." The following was Mr. Annesley's mode of operating: "Having made the external incision larger, and with caution, until the peritoneum is fully exposed, the fluctuation of the abscess will be distinctly felt. An abscess-lancet should then be introduced, and the tumor laid open to the full extent of the external wound, which ought to be from two and a half to three inches in length."

Important as were the directions given by Mr. Annesley, Dr. Graves, of Dublin, advanced a step further, and proved that when adhesions had not yet formed between the liver and walls of the abdomen, an operation might still be performed, which would insure the speedy discharge of matter externally. Having a case under his care, in which it was evident that an abscess existed, and adhesions had not formed, he had an incision made down to the peritoneum, and after plugging the wound with lint, allowed suppuration to take place. In two days after, upon the patient's sneezing, matter burst forth from the wound, and the man ultimatly perfectly recovered. In cases where the existence of matter is doubtful, Dr. Murray advises exploration; this practice Mr. Stovell, in common with others, strongly condemns.

An article on *Pericarditis, Endocarditis, and Organic Diseases of*

the Heart and Aorta, as observed chiefly in the clinical ward of the Jamsetjee Jejeebhoy Hospital, at Bombay, by C. MOREHEAD, M. D., Prof. of Med. in Grant Medical College, is the most elaborate paper in the collection, extending over one hundred pages of the volume. The report is based on the observation of forty-nine cases of affection of the heart and aorta in natives of Bombay, during four years. Of this number, twenty-five were cases of pericarditis and endocarditis, and twenty-four had structural disease of the heart and aorta. The author had two objects in view in submitting this report; "One to add to our clinical knowledge of an important class of diseases, the other to correct the erroneous impression which seems to exist, that acute rheumatism in India is rarely associated with pericarditis or endocarditis." Drs. Bird and Norman Chevers, two of the most recent authorities on this subject, entertain this view; but Dr. Morehead believes, that though acute articular rheumatism may not be as common in India as in colder climates, yet it is by no means of unfrequent occurrence, and that the association with it, of pericarditis or endocarditis, is as common in one country as in the other. We cannot extend our notice of this excellent paper to any greater length; but will remark, that it is drawn up in an admirable manner, and is conclusive in regard to the points above stated.

The concluding paper in the *Transactions* is the *Annual Report of the European General Hospital*, by M. STOVELL, Esq. From the tables of admissions and deaths it appears that dysentery was the most common, and fever the most fatal of the diseases admitted. The Appendix contains interesting matter, but chiefly of a local character.

ART. XI.—*A History of the Fishes of Massachusetts.* By DAVID HUMPHREYS STORER, M. D., A. A. S.—Part 1st, pp. 90. 4to. Plates, 16.

WE have received the commencement of this magnificent Report, which is published under the auspices of the American Academy. We learn that the subsequent portion of the communication, which is ready for the press, will be published as rapidly as the funds of the Academy and the great expense of the plates will permit.

In 1839 Dr. Storer, as one of the Commissioners on the Zoology of Massachusetts, prepared a Report on the Icthyology of the State, but being produced with dispatch and unaccompanied with plates, it had acknowledged imperfections.

In the work before us the author had carefully re-described all the species before noticed, besides adding the descriptions of quite a num-

ber of new species which have been ascertained to exist in the waters of that State. In the preparation of this work, the author informs us that he "has kept in view the primary object of the commission—to ascertain the value of the Mass. Fauna in an economical point of view, rather than to prepare labored scientific descriptions." Our lamented Dr. Kay in his Report on the Fishes in New York, characterizes Dr. Storer's publication of 1839 as a "masterly report," and "an invaluable document to the American Icthyologists and every way worthy of its eminent author." But the present work which the author considers a completion of his former report, is much in advance of that production, in extent, accuracy and utility. The descriptions to a scientific reader, are charming. The are very full, accurate, and lucid. The general remarks and the "economical" information given, make the report one of no little interest to the general reader. The letter-press is beautiful, and a model specimen of the art of typopraghy. But what gives the work a feature of great attractiveness as well as utility, are the most admirable illustrations by the pencil of Mr. Sourel, the accomplished draughtsman associated with Prof. Agassiz. The figures are drawn on stone, and yet they have such an artistic finish, that, to the casual observer, they would be mistaken for steel mezzotints. They contrast very favorably with those of our own State Report on the subject. Indeed, although we do not undervalue the results of our own Zoological survey, we must confess that the published volumes, especially the earlier ones, are not what they would have made them, had not their means and time been limited. The later reports, however, particularly those of Prof. Hall on Paleontology, do their authors and the State great credit. More accurate drawings, or more exquisite engravings are not to be found out of those magnificent volumes last published by Prof. Hall.

We cannot close this brief notice without alluding to the fact, that notwithstanding Dr. Storer has made frequent and able communications to learned Societies, has brought out his report on the Fishes of Massachusetts in 1839, and now his more complete Report, as well as his "Synopsis of the Fishes of North America," he is still hard at work in the professional harness, hourlyoccupied with hospital and general practice, with clinical and private teaching. This is an item of evidence out of the abundance which might be furnished, of the fact that a profound cultivation of the collateral sciences—the extra-professional even—is not incompatible with strict attention to the duties of the daily practitioner of medicine. We would not insist, however, that this remark is of universal application; and yet we must urge attention to the fact which we have elsewhere more fully discussed, that the physician is of necessity a

Naturalist; that, although he may not have minutely investigated the various departments of natural science, upon which his strictly professional knowledge depends, he does not merit the title by which he is known, unless he has some appreciation of the philosophy of natural history; unless he has a general comprehension of the steps which have led to the establishment of the principles and rules with which he is more immediately concerned at the bedside.

We deem it not inappropriate here to remark, that many medical pupils, not to say practitioners, do not know what aids they need or what authorities to consult in commencing the study of natural history, especially the department of Zoology. We take the liberty therefore in this connection, of calling their attention to the elementary, yet comprehensive work of Prof. Agassiz and Dr. Gould, *The Principles of Zoology*, and also to that capital hand-book, Wagner's *Comparative Anatomy of the Vertebrate Animals.* Possessed of a knowledge of these works, and armed with the scalpel and microscope, the pupil or practitioner will be prepared to further prosecute the subject with an enlightened zeal and prospect of success; for when he has thus far advanced, we will venture to predict that his acquired enthusiasm will not abate till he has not only made respectable attainments in Zoology, but examined the principles of other departments of Natural Science, as Geology, Mineralogy, Botany, etc. C. G.

BIBLIOGRAPHICAL NOTICES.

ART. XII.—*Medical Jurisprudence.* By ALFRED S. TAYLOR, M. D., F.R.S. Lecture on Medical Jurisprudence and Chemistry in Guy's Hospital, etc. Third American, from the fourth London edition. Edited, with additions, by EDWARD HARTSHORNE, M. D., one of the Surgeons of Wills' Hospital, etc. Philadelphia: Blanchard & Lea, 1853. 8vo. pp. 621.

Fracture Tables. By FRANK H. HAMILTON, A. M., M. D., Professor of Surgery in the University of Buffalo, and Surgeon to the Buffalo Hospital of the Sisters of Charity. With a Supplement compiled from Dr. Hamilton's notes, by JOHN BOARDMAN, A. B., comprising in all an analysis of 461 cases of fractures. Buffalo, 1853, pamphlet, pp. 36.

ON the issue of a former American edition of Dr. Taylor's work, we took occasion to express a favorable opinion of its character as a useful and convenient volume on Legal Medicine. The author deservedly occupies a high position as a medical jurist, and his writings exhibit the wide range of a learned and comprehensive mind, with the conciseness

and accuracy of the practical man. Though the limits of this work forbid that extended discussion and illustration of subjects which give to the volumes of Beck such authority and completeness, yet we know of no work on Medical Jurisprudence which contains in the same space any thing like the same amount of valuable matter.

Since the publication of the last edition, its former erudite editor, Dr. Griffith, has deceased, and the task of preparing the present edition for the American press has been performed by Dr. Hartshorne. Both author and editor have availed themselves of the former notes of Dr. Griffith. The principal additions to the present volume are made under Poisoning, Wounds, Abortion, Legitimacy, Rape, and Insanity.

We have purposely placed in this connection the second edition of Dr. Hamilton's *Fracture Tables*, because they have an important bearing upon a branch of legal medicine in this country, which is daily acquiring a more and more fearful import; we refer to the suits at law for alleged mal practice in the treatment of fractured bones. The disposition to institute legal proceedings against the surgeon for the treatment of fractures has become so strong, that prosecutions have been made where there was not the slightest ground for complaint—where, indeed, the practitioner merely examined the limb at the request of the patient, some months after the treatment was concluded. And this spirit of persecution is stimulated, and more widely disseminated on every repetition of these trials; so certain is it that the verdict will be given in favor of the plaintiff. The testimony of the most veracious witnesses, and the opinions of the highest surgical authorities, are set aside by judge and jury, and the whole weight of a malicious prosecution and mercenary evidence is allowed to fall with crushing effect upon the defenceless surgeon. In the case alluded to, the defendant, though a teacher of anatomy of the greatest respectability, chose to pay largely for a settlement, rather than allow the case to come to trial, and incur the increased expense, and an almost certain verdict against him. To the practitioner in the country towns these remarks have a peculiar significancy; he knows full well the danger of touching the simplest fracture, for when the responsibility is once undertaken, he has no means of defence. Though he restore his patient to his family with a sound and useful limb, the reward may be a tedious prosecution, a heavy verdict of damages, and a blasted reputation. Within the last few months no less than four such suits have come to our knowledge, and in all but one, the defendants were mulcted in heavy damages, in the face of the most ample and convincing testimony in their favor.

The question is now beginning to be earnestly agitated, What mea-

sures of protection can the surgeon avail himself of in the practice of his profession? Dr. Hamilton is accustomed to fortify himself with the testimony of medical witnesses, and has thus far escaped prosecution. This precaution is a wise foresight, but the history of many of these trials, the sympathy which always exists for the plaintiff, and the ease with which medical testimony is often set aside in our courts, leads us to doubt its protection when brought to trial. Dr. Crosby, of N. H., who has recently suffered from these iniquitous proceedings, now demands from his patient a bond that he will not prosecute; but we are informed that even this instrument does not protect the surgeon in this and many other States.

We believe, however, that in the volume before us, Dr. Hamilton has conceived the true method of putting an end to these unjust prosecutions. No man, we are persuaded, has expended more valuable time and patient effort to defend members of the profession arraigned before these unprofessional juries for alleged malpractice, than Dr. Hamilton; and no one was better qualified by observation and experience to detect the true source of evil and apply the appropriate remedy.

One of the most serious difficulties in the trial of a suit for malpractice in this country, is the conflicting and often contradictory nature of the medical testimony. It is this that misleads both judge and jury, and in nine cases out of ten, decides the case against the defendant. The very means on which the surgeon can alone rely for defence, the opinions of his professional brethren, become of little or no account in the hour of trial; and however fair his case may actually be, he must submit it to the mercy of an unsympathizing jury. The great point to be attained, therefore, to insure him a fair trial, is to render the medical evidence consistent with itself. This is to be done, not by taking the individual opinion of any man, however eminent, as law, but by having the average experience of the profession, as a guide. At present the medical witness testifies without any fear of having his opinions questioned, except by opposing witnesses, with whom he stands on an equal footing before the court. If he is honest, his opinions may be based on such limited observation as to make them really of no value; but if he is dishonest, and, as is often the case, personally interested in the prosecution, there is no limit or check to the knavery which he may practise.

It is obvious, therefore, that to correct this great evil, and make the medical evidence on which these medico-legal decisions depend, consistent with itself and reliable for a court to follow, it is essential to establish by indisputable facts, the average of medical experience and skill on all those points in surgical practice, made the subject of litigation. For the surgeon is required by law to practise his profession with only

average skill and success. To such a collection of facts, and the principles deduced therefrom, every medical witness would be compelled to conform his testimony, while the court would have a guide to estimate the value of all medical opinions, as authoritative as the statute itself.

In his *Fracture Tables* Dr. Hamilton has attempted, and we think successfully, to exhibit the results of the treatment of fractures under circumstances the most favorable to success. Every precaution was taken to make these statistics reliable, and the deductions seem to us unimpeachable. We believe, therefore, that Dr. Hamilton has achieved a most important undertaking in the preparation of these tables, and can but consider his work as a valuable contribution to that feature of legal medicine in this country, above noticed. By its extensive circulation it will not only shield the surgical practitioner when brought to trial for the maltreatment of fractures, but must have a strong tendency to prevent the institution of these unjust prosecutions.

We have been led into this train of remark by the great importance which this branch of medical jurisprudence is beginning to assume in several States, and the occasion which the notice of these works, and especially the latter, seemed to offer. We do not impeach the integrity of our courts of law; their decisions are what we might expect in cases where their only guide is the wrangling testimony of medical men. Nor do we wish to shield from merited punishment the practitioner who, from ignorance, or neglect of his patient, is truly guilty of malpractice. What we desire is, that a true standard of success in all surgical practice be set up, by which, if community cannot, our courts, at least, may decide justly in cases of alleged malpractice.

Art. XIII.—*Principles of Medicine: Comprising General Pathology and Therapeutics, and a brief general view of Etiology, Nosology, Semiology, Diagnosis, Prognosis and Hygienics.* By Charles J. B. Williams, M.D., F.R.S., late Professor of the Principles and Practice of Medicine, and of Clinical Medicine, &c., &c. Edited, with additions, by Meredith Clymer, M.D., Fellow of the Phil. Coll. of Phys., &c. Fourth American edition, revised. Philadelphia: Blanchard & Lea, 1853.

In announcing the issue of a fourth, and revised American edition of Dr. Williams's *Principles of Medicine*, we have but to reiterate the favorable opinion of it which we have heretofore expressed. It is one of the best works on the subject of which it treats in our language. The present is a decidedly improved edition, and will, we doubt not be still more favorably received by the profession than its predecessors.

ART. XIV.—*A Treatise on General Pathology.* By Dr. J. HENLÉ, Professor of Anatomy and Physiology in Heidelberg. Translated from the German, by HENRY C. PRESTON, A.M., M.D. Philadelphia: Lindsay & Blakiston, 1853., pp. 391.

DR. JACOB HENLÉ has long ranked among the most eminent writers on physiological and pathological subjects, in Germany. Early associated with John Müller, the most distinguished physiologist of modern times, his vigorous, analytical mind was strongly directed by the brilliant experiments and investigations of his teacher, to original research in the departments of anatomy and physiology. Aided by the microscope in his minute analyses, the additions which he has made to these branches of medical knowledge have been numerous and important. Subsequently his attention was directed to pathology as the basis of the rational practice of medicine, and in this field of study, more perhaps than in any other, has he achieved a just celebrity. During the last ten years his name has been associated with many of the most important improvements in this rapidly advancing science, and his literary contributions to this subject have been highly prized.

It was with no little gratification, therefore, that we took up Henlé's *Handbuch der Rationellen Pathologie*, clothed in an English dress. We have read the work with great interest and profit, and consider it a valuable addition to our home stock of foreign medical literature. We do not believe, however, that it will prove a marketable book. It is too speculative and theoretical for the matter-of-fact student and physician of our times, who value medical works according to their *practical* character, that is, according to the number of useful prescriptions, and hints for daily practice, which can be extracted from them. For this reason it can never become a text-book in this country, and will be read by those only who are fond of speculating upon the facts already established in medicine. The style of the translation is against the work. To those who are familiar with the peculiarities of the German language, its sententious, yet expansive character, a very literal translation has many advantages over a free translation, and so far from obscuring, may make the sense of the original even more clear. But to those, on the contrary, who have no knowledge of the language, the composition of this work will have few attractions, and in too many instances the literal meaning of the author will not be discovered.

PART THIRD.

FOREIGN MEDICAL RETROSPECT.

PRACTICAL MEDICINE.

On the Treatment of Simple Erysipelas as a Local Acute Disease. By JOHN HIGGINBOTTOM, ESQ., F.R.S.—I wish to bring before my professional brethren the following questions.

1. Is simple acute Erysipelas a purely local, or a constitutional disease?

2. Is it sometimes a local, and sometimes a constitutional disease? or,

3. Is it simultaneously both, a local and a constitutional disease?

I am of opinion that it is in all cases purely local; and that the constitutional symptoms are a result of the local disturbance. This opinion I have formed from the following facts.

1. I have had a number of cases of erysipelas on the face and elsewhere, where there have been no constitutional symptoms; in these the disease has been directly arrested and subdued by the application of the nitrate of silver. Now it is my opinion that, if the erysipelas had been allowed to proceed without the local application, severe constitutional disturbance would have been the result.

2. If from exposure to wet or cold, etc., a feverish attack should come on, and in several days erysipelatous inflammation should supervene; on a prompt application of the nitrate of silver, along with the use of common remedies for the cold, the patient becomes convalescent in a few days; but if the local application is neglected, the inflammation runs its usual course, the constitutional symptoms become more aggravated, and the illness is much prolonged.

3. If the erysipelas and constitutional symptoms are simultaneous, a prompt application of the nitrate of silver, and the use of active constitutional remedies, cut short the disease; and the patient is convalescent in a few days. But if the local application is neglected, the disease runs its usual and often-destructive course, setting at defiance the most active constitutional treatment.

In my *Further Observations on the Nitrate of Silver*, p. 31, is related the following case, which will illustrate what I have advanced.

CASE 1. Mrs. S., some years since, had a severe attack of erysipelas

of the face and head, which ran its course under the old medical treatment; the effects of the disease were so severe as to confine her to her bedroom for six weeks.

In November, 1845, she had another attack of erysipelas, which had progressed twenty-four hours before I saw her. A decided application of the nitrate of silver was made to the parts affected, and purgatives were given. She was convalescent in seven days.

The following year, in October, erysipelas again made its appearance on the face. She had taken a purgative before I saw her. One decided application of the nitrate of silver was sufficient, and she was not confined to her house a single day. No further remedies were required.

Mr. Nunneley, of Leeds, in his monograph on Erysipelas, says (contrary to his own opinion), that Dr. Smyth, Mr. Earl, Mr. Arnott, Mr. James, and Mr. Lawrence, consider that "erysipelas is essentially a *specific disease*, affecting one tissue alone, characterized by the local disorder, which forms the chief symptom and upon which the constitutional disturbance depends."

From the commencement of my treatment of erysipelas with the nitrate of silver, I have considered it a local specific disease; and this view appears to be supported by the speedy subsidence of the fever, as soon as the local disease has been subdued by the application of the nitrate of silver.

Erysipelas may be considered as the result of a poison, *sui generis*. It remains at first like a small patch on one side of the nose, cheek, or elsewhere, and makes often no progress for twelve or twenty-four hours, continuing so long as to generate its own poison, which is then carried into the system; and at this period, the constitutional symptoms commence.

The following are my reasons for believing that erysipelas is a local disease; which I wish to repeat.

1. If erysipelas makes its appearance on the face without constitutional disturbance, the prompt application of the nitrate of silver alone, is sufficient to arrest and subdue the disease.

2. If fever and constitutional symptoms come on before the appearance of erysipelas, the simultaneous use of the nitrate of silver and constitutional remedies cut short the disease, and the patient is convalescent in three or four days. But, if constitutional remedies alone are used, and the nitrate of silver neglected, the disease will commonly run its usual course.

3. If the erysipelas and constitutional disturbance come on simultaneously, the prompt use of both the nitrate of silver and the constitutional remedies arrest and subdue the disease. If the nitrate of silver is omitted, the disease runs its usual course.

4. Whether the disease be idiopathic or traumatic, the erysipelas has the same characteristics. The inflammation spreads and produces the same dire effects; first, on the skin; second, on the cellular tissue; third, on the mucous and serous membranes. Both the idiopathic and the traumatic erysipelas are cured by the same means.

Of course, the disease is often mild or aggravated, according to the healthy or unhealthy state of the patient, whether temperate or intemperate. I have always found consumers of alcoholic drinks most difficult to cure, in erysipelas as well as in all other diseases; and if they were banished altogether from medical practice, acute disease would be sooner cured, and chronic disease would be more manageable.

I do not believe in the occurrence of metastasis in erysipelas. That distant parts are affected in erysipelas is true; but this appears to me to be caused by the extension of the disease, and by the specific poison of the erysipelas carried into the system.

I would make an observation here which I have often insisted upon, viz., that in all cases a strong solution of nitrate of silver should be used, *one scruple of the nitrate to one drachm of distilled water.* I not only use this strong solution, but also rub the stick of the nitrate of silver on any particular part where I wish it to be well applied. I have attributed the failure of this excellent remedy in the hands of some surgeons to the use of a weak solution; and this I have named, with other causes of failure, in my *Additional Observations*, page 19. In an excellent paper, by Dr. W. S. Oke, published in the Association Medical Journal for January 21st, 1853, p. 53, "On Erysipelas, etc." he mentions a surgeon who has used the nitrate of silver successfully, with a solution of one scruple of the nitrate of silver, six drops of the nitric acid, and *one ounce* of water. I am sure such a weak solution cannot be depended upon. I never knew a very free application of the strong solution, or the stick of nitrate of silver, "produce the destruction of the cutis vera," or be attended with any ill consequences.

Dr. Oke says, "the Royal South Hants Infirmary, in common with other hospitals, has been occasionally invaded by erysipelas with an average result; but since the nitrate of silver has been employed, the unfavorable terminations have been comparatively very few; and, I am persuaded, that were this excellent remedy more frequently adopted, erysipelatous inflammation might be generally controlled."

From a late epidemic of erysipelas in Nottingham, I have selected six cases; four where the nitrate of silver was applied, and two where it was omitted; the results of which were in accordance with my experience for the last twenty years.

Case 2. Mr. M., a railway clerk, aged 26, had erysipelas on the left side of his face, not reaching the scalp. He was slightly indisposed. One decided application of the nitrate of silver was alone required. He took an ipecacuanha emetic, followed by a calomel pill and purgative draught, and a saline mixture. He only required visiting four days.

Case 3. Mr. F., a farmer about 50, a free liver, called at my house to consult me, having an erysipelatous inflammation of the face upon the right ear. It was spreading near the scalp. He was so little indisposed, as to be able to ride five miles on horseback to visit me. I applied directly, and very freely, the nitrate of silver to the inflamed part close to the right scalp, and on and beyond the inflamed ear, fear-

ing much that the scalp would become affected. I thought proper to prescribe for him an emetic of ipecacuanha, a calomel and colocynth pill at bed-time, and the following morning an active purgative mixture. He returned home on horseback, and I heard nothing more of him for a week, when he sent for a repetition of the purgative mixture, with a message that the inflammation was quite gone.

Cases 4, 5. In October, 1852, two sisters, between 20 and 30 years of age, living together in the same house, had erysipelas. The eldest had been indisposed for several days before I saw her, and the disease was attended with much constitutional disturbance—the erysipelas having partially affected the scalp. I thought it necessary to have the whole head shaved (although it caused considerable pain), so that I might apply the solution of the nitrate of silver freely to the whole scalp. The usual constitutional remedies were used. In this case the recovery was more tardy, on account of the application of the nitrate of silver having been so long delayed. A troublesome inflammation of the eyes was produced in this case, by the neglect of applying the nitrate of silver on the inflamed eyelids, which should always be attended to, in order to prevent inflammation of the conjunctiva.

The younger sister, disliking the application of the nitrate of silver, was desirous of taking an emetic and purgatives, to check the inflammation; but finding the erysipelas to come near the scalp, she submitted to a very free application of the nitrate of silver, which extinguished the inflammation, and she was glad that her hair was preserved.

In the two following cases, the nitrate of silver was not applied.

Case 6. Mr. G., aged 54, of a gross habit, an habitual consumer of alcoholic drinks, and a smoker of tobacco (but not an intemperate man), had in October a catarrh, and felt generally indisposed. There was a slight blush of erysipelas on the left side of the face, but not sufficient to excite any particular attention. Remedies were employed for his catarrh, but no local application was used to the erysipelas. The inflammation progressed over the scalp, and produced cerebral disturbance, which, however, was not severe; the throat and the mucous membrane of the larynx became inflamed; the irritation and cough increased; the constitutional symptoms were now very severe, the mucous membranes generally were affected; the joints were affected with severe pain and inflammation (similar to rheumatism), and the secretions were diminished in quantity, and in a vitiated state. A general bad state of body was induced, and after suffering a number of weeks, he died.

In this case all the severe symptoms followed the increase of the erysipelatous inflammation, and I think would have been prevented by a prompt and early application of the nitrate of silver.

Case 7. In November, Miss J., aged 35, was attacked with a slight erysipelas on the left side of the cheek and nose. No external application was used. An emetic, active purgative, saline draughts, and repeated doses of calomel and James's powder, were given. The erysipelas progressed over the scalp, down to the neck, and a little on the chest. A continued and severe indisposition was the consequence, at-

tended with cerebral disturbance, producing delirium for several days; for which blisters were applied to the nape of the neck. Several large abscesses formed in the neck and chest; the last of which was opened in eight weeks from the commencement of the erysipelas.

The above two cases were all I had attended for some years, where the nitrate of silver was not applied. Both were mild in the commencement. The result showed the necessity of a prompt and decided application of the nitrate of silver, even in the slightest attacks of erysipelas, to prevent future evil consequences. In the last case, all the severe illness would have been prevented by a timely application of the nitrate of silver. I do not say it *might* have been prevented, for the continued experience of twenty years or more has assured me of the practical truth, that it *would* have been prevented. I have had no case where abscesses have formed, when the nitrate of silver has been early and well applied in erysipelas.

I have found that a very decided application of the nitrate of silver in PHLEGMONOUS ERYSIPELAS has the extraordinary power of preventing the destruction of the subcutaneous cellular tissue, by preserving the integrity of the cutis vera, and subduing the cuticular inflammation. Even in a patient, where the limb has been as large again as the other, in which it could be scarcely expected to be benefited, the application has so far modified the inflammation as to render it a case of simple phlegmonous abscess, which has been relieved by a free opening with the lancet, and where there has been no loss of cellular tissue.

CASE 8. Mrs. B., aged 68, living in a low part of the town (Narrow Marsh), had phlegmonous erysipelas of the whole of the right leg, extending a little above the knee on the thigh; the leg was as large again as the natural size, and was very tense and painful; there were some vesications on the fore part of the leg; the patient had been neglected, till the state of the limb alarmed the friends. I directed an emetic, purgative, and saline mixture, and applied the strong solution of the nitrate of silver very freely on the whole of the leg, and on and above the inflamed part of the thigh. The following day, the nitrate of silver had had the desired effect of allaying all irritation and inflammation, in which state it remained for four days; on the second and third day, a considerable degree of vesication had taken place, from the free application of the nitrate of silver, but I found the limb did not at all diminish in size; on that account, I knew from former cases, that suppuration had taken place. On the sixth day, I made a free opening about two inches in length at the most depending part, about the middle of the limb; a large quantity of pus was evacuated, but there was not the least appearance of any sloughing of the cellular substance. In a few days afterwards, I made a small opening above the outer ankle, from which some sero-purulent matter was evacuated; and in a few days, on the opposite side of the limb, from which issued only a little serous fluid. The limb quite recovered. No further application was required, beyond the black lint and nitrate of silver to the sores, and a common linseed poultice constantly applied, repeated every eight hours.

I never knew a limb in the same state, under the common mode of treatment, which terminated so favorably.—*Association Medical Journal.*

On the Employment of Iodine Injections in Chronic Dysentery. By M. Delioux.—On considering the success which has crowned the practice of those practitioners who have ventured to apply the tincture of iodine to the surface of such delicate and irritable membranes as the pleura and peritoneum, it struck me that the endeavors to modify the lesions which give rise to diarrhœa and dysentery by this means would be equally successful. Iodine, although a powerful topical irritant, does not appear to me to be capable, especially when sufficiently diluted, of causing a more severe inflammation than other remedies, such as nitrate of silver, which may be injected with impunity into the great intestine. I prescribe the iodine injections in the following manner:—Alcoholic tincture of iodine, from 10 to 20 grammes (about 150 to 200 grains). Iodide of potassium, from 1 to 2 grammes (about 15 to 30 grains). Water, from 200 to 220 grammes (about 6 to 7 ounces). The iodine is thus maintained in solution by the alkaline iodide. I direct an emollient injection to be first administered, to clear out the intestine, and then the iodine injection, which thus acts at once, and with full force, on the mucous membrane.

I commenced by experimenting with small doses of tincture of iodine; but after having assured myself of the innocuousness of this injection, I raised the dose by degrees, and found that the quantity might be increased without danger to 30 grammes (1 ounce and 12½ grains).

It often happens that the iodine injections cause only a slight colic; at other times, after the first or second, the alvine dejections augment, to diminish immediately, at the same time changing their character; at other times, they are diminished or suppressed immediately. In twelve cases reported in my "Memoirs," the intestinal affection was remarkably benefited or cured ten times; twice the treatment was unsuccessful, but did not aggravate the disease. To guard my patients against the possibility of suffering from the irritant effects of the iodine, I always at the same time prescribe a laudanum injection, which is to be administered in case the other should cause too much pain. In general, this last prescription does not require to be used; if it is necessary to have recourse to it, it is with the certainty of remedying those effects, which with me have never been severe. I am of opinion that the iodine injections are also capable of acting on the surfaces of ulcers, abscesses, œdematous swellings, and hypertrophies of the cæcum and colon; an effect analogous to that produced by the application of tincture of iodine to the surfaces on the exterior of the body affected with ulceration, purulent sinuses, and insoluble tumors. Whether this agent acts by substitutive irritation, or by any other unexplained mode, it appears to me to exercise on the intestinal mucous membrane properties at once incarnative, healing, and resolvent. But it is not only on the superficies of the diseased organ that the injection is to act. The iodine is partly absorbed, and it is very probable that, consecutively, it may act on the thickened intestinal mu-

cous membrane and mesenteric glands.—*Dublin Medical Press, from Presse Méd. Belge.*

On Spasmodic Asthma. By Prof. Eben Watson, M.D.—We find the following conclusions appended to a paper by Dr. Watson, in the April number of the *Glasgow Medical Journal*:—I shall now recapitulate in brief terms the chief propositions sought to be established in the preceding pages.

1st. That very many cases of bronchial asthma have their origin in laryngeal disease; that some remain for a variable period, as a spasmodic affection of the glottidean muscles, and that in all cases of the disease in question, although the bronchi have long been affected, the chief contraction still occurs in the larynx.

2d. That if this contraction at the glottis be in any way overcome, that of the smaller bronchi either simultaneously or speedily relaxes.

3d. That the usual remedies employed in cases of spasmodic asthma, are either such as are directed against the complications of the disease, and not against its proximate cause, or such as have been found in practice incapable of accomplishing its removal. The latter are therefore useless, and the former unfit to fulfil the indication referred to above.

4th. But this indication may be answered more or less perfectly in different cases, by the application of a solution of caustic of moderate strength (gr. xv., or ℈i. to ℥ i.) to the glottis, which is the organ chiefly affected.

5th. Cardiac asthma, as it is called, does not usually depend proximately on simple spasmodic contraction of the bronchial tubes, but rather on vesicular emphysema. Cases of this kind are therefore unfit for topical treatment.

6th, and lastly, Electricity passed in gentle currents, as much as possible along the bronchial tubes, may be found to diminish their contractility; and repeated small doses of strychnia may likewise co-operate with the other means of treatment, probably by withdrawing the nervous energy to other parts, at a distance from the affected air tubes."

SURGERY.

Treatment of Dislocation Complicated with Fracture.—In the *Revue Medico-Chirurgicale* for February, 1853, M. Malgaigne gives a summary of the present state of knowledge on this subject, and adds the results of his own experience.

In seven years he has had under his care, in the hospital of St. Louis, thirteen cases of dislocation complicated with fracture, viz., one case of dislocation of the fourth cervical vertebra with fracture of the posterior arch: one of dislocation of the sacrum with fracture of one ilium: one of dislocation of an arm with fracture of a leg: one of dislocation backwards of the elbow with fracture of the fore-arm: one of dislocation backwards of the elbow with fracture of the radius: one of dislocation forward of the radius, with fracture of the fore arm: one of dislocation with fracture of the radius: three of dislocation of the

lower end of the ulna with fracture of the radius: one of dislocation of the knee with fracture of the leg: one of dislocation of both knees with fracture of the left leg and arm: and one of dislocation of the tibio-tarsal joint with fracture of the tarsal bones.

Among these cases, those are the most frequent in which the fracture affects the the luxated bone: this is most commonly found in the arm; then in fore-arm, thigh, and leg.

From the attention of the surgeon being directed to the fracture, often to the exclusion of the dislocation; from the swelling being more rapid and considerable than in simple cases; and from the pain of the dislocation being masked by that of the fracture, the luxation is often not detected by the surgeon: and M. Malgaigne acknowledges that he has erred in this way in a case of dislocated humerus, and in one of dislocation backwards of the head of the radius.

When dislocation with fracture is recognized, how is it to be treated? Pasicrates, who wrote about half a century before the Christian era, and Oribasius, advise that the dislocation should be first reduced; and then the fracture. Aristion preferred extension, so as to act on both at the same time. Celsus and Galen say nothing of the subject; and Paulus Egineta and Haly Abbas give very meagre instructions Guy of Chauliac writes: "If dislocation is complicated with fracture, let the dislocation be first reduced, and then the fracture, if possible. But if otherwise, let the fracture be reduced: and when the callus is firm, the dislocation may be treated." J. L. Petit quotes this precept, and adds that reduction of the dislocation is impossible when the fracture is near the joint. To this M. Malgaigne objects, first, that it is not the distance of the fracture which forms the great obstacle; secondly, that it is rarely that reduction must be effected by extension. Boyer properly admits that the luxations of the ginglymoid joints can be reduced without extension: but, with regard to the ball and socket joints, he says that dislocations cannot be reduced while fracture exists, and that, when the callus is solidified, the length of time opposes an obstacle. Sir A. Cooper advises immediate reduction of the dislocation in all cases, from fear of reproducing the fracture, if extension is employed subsequently.

In recent cases of dislocation, M. Malgaigne observes that mild means succeed best; such as pressure, impulsion, and rotation; and that the ball and socket joints are as amenable to this treatment as the others.

Delamotte, in his *Traité de Chirurgie*, relates a case of dislocation of the humerus, complicated with fracture of the bone near the junction of the upper with the middle third, and with fracture of the clavicle. The dislocation was reduced by an assistant pressing firmly on the acromion, while Delamotte "drew the head of the bone downwards, at the same time pressing it upwards:" in fact, by a movement of rotation. Laroche (*Thése Inaugurale*, Strasbourg, 1803) had a case of dislocation of the humerus under the clavicle, the bone being also broken at the lower third. Having had the acromion fixed, he pushed back the head of the humerus into the glenoid cavity. James Gordon (*Trans. of the*

Medico-Chir. Society of Edinburgh, 1824), reduced in a similar manner a dislocation of the humerus, complicated with comminuted fracture of the bone. Haughton (*Lancet*, 1845) reduced on the tenth day dislocation complicated with fracture four inches below the acromion.

Dupuytren (*Leçons Orales*, tome i. p. 85) asserts that when luxation of the humerus is complicated with fracture of the surgical neck, art and nature can do almost nothing. But, in 1777, Bottenheit reduced two cases, in which the fracture was as close as possible to the joint; and more recently, M. Barom (*Gazette des Hopitaux*, 1841. p. 192) has obtained a similar result on the sixth day. More recently, M. Richet (*Union Médicale*, 1853, p. 499) has reduced a dislocation of the humerus complicated with fracture of the neck of the bone, by pressing with the thumb on the acromion, and pushing the head of the bone outwards and upwards with the fingers.

Luxations of the femur may be reduced in the same way as those of the humerus. In 1836, M. Eteve had a case of dislocation backwards of the femur, with fracture of the bone at the middle third, a penetrating wound of the knee joint, and a fracture of the fibula on the same side. The patient was held firmly by two assistants, who placed their hands under the axillæ; two others held a towel surrounding the thigh, between the dislocation and the fracture; while three others held up the limb, so that the thigh was bent almost at a right angle with the pelvis. After making gradual extension, the surgeon pushed with all his strength the head of the femur into the acetabulum, and reduction was instantly complished. (*Gazette Médicale*, 1838, p. 751.) Some years before this, Bloxam had reduced, on the eighth day, a dislocation of femur on the pubes, with fracture above the middle third of the bone, by flexing the limb on the pelvis, and pushing the head of the bone downwards and backwards.

Examples of the reduction of dislocation of the ginglymoid joints are more rare. Pezerat (*Journal Complémentaire*, tome iv. p. 276) had a case of dislocation backwards of the radius and ulna, with fracture of both bones two inches above the styloid process. The dislocation was immediately reduced: but by what means is not stated. M. Malgaigne relates a case in which there was dislocation backwards of the elbow joint, with fracture of both bones at their middle. M. Malgaigne chloroformed the patient, and readily pushed the bones into their place. The fracture was treated; and the patient nearly recovered the perfect use of his arm.

One case only of reduction of dislocation of the knee, with fracture, is known to M. Malgaigne. In 1850, a woman came under the care of M. Jules Guerin (*Arch. Gén. de Méd.*, October, 1852, p. 152) with dislocation outwards of the left knee, and fracture of both bones of the leg at the middle. Slight extension was employed: and the luxation was reduced by rotating the leg from without inward.

Delamotte relates a case of dislocation of the foot with a fracture of the leg three finger breadths above the joint. He applied extension and counter-extension; and pushed back the dislocated bone with the palm of the hand. That the extension here, as in other cases, was not of much

value, M. Malgaigne thinks proved by the fact, that Delamotte succeeded without it in reducing dislocation in an analogous case. M. Corbin, in 1843, communicated a similar case to the Academy of Medicine. Delamotte (*Chirurgie*, 1845,) and M. Robert (*Journal de Chirurgie*, 1842) have reduced dislocations of the lower jaw, complicated with fracture.

In operating on the cases, M. Malgaigne recommends that chloroform should be used; and that it should even be temporarily put up in an apparatus before the reduction of the dislocation is attempted. Gentle motion of the joint should be practised at an early period.

In dislocations of older standing, Boyer, Sir A. Cooper, and Dupuytren, discountenance attempts at reduction. In 1828, however, Warren reduced a dislocated humerus, where the bone had been fractured, at the end of seven weeks. In 1846, M. Malgaigne met with a case of fracture of radius, with dislocation backwards of the elbow. He did not discover the latter accident until the seventh day; and when he then tried to push the bones into place he failed. He therefore waited until the fracture was united; and, on the thirty-eighth day, reduced the dislocation by extension and sudden flexion.

He also relates a case of dislocation of the radius with fracture of the fore-arm. Reduction of the dislocation was attempted after the union of the fracture: it was unsuccessful, but the power of motion was improved.

M. Malgaigne concludes his essay by referring to cases in which a false socket has been formed; and in some of which, M. M. Riberi, Peyrani, and others, have successfully attempted, by perseverance in passive motion, to give to the limb a considerable power of movement.—*Assoc. Med. Jour.*

Bi-chloride of mercury in the treatment of syphilitic buboes. By T. B. Beatty., Esq.—There are few more troublesome cases which the surgeon can be called upon to treat than buboes, in complication with either gonorrhœa or primary syphilitic sores. Whether on account of the specific cause of their inflammation, or the peculiar structure of the parts of it, it is difficult to assert; but that these glands, situated along Poupart's ligament, when they become inflamed either from absorption of the venereal virus or from irritation conveyed along the lymphatics, do show a ready tendency to suppurate, and subsequently to burrow, and form sinuses beneath the skin, with frequently an indisposition to heal, is too well known to need further comment.

To derive the hoped for special stimulating property which the bichloride of mercury exerts, attention must be paid to the particular stage at which the bubo has arrived, before its application is to be attempted. It is when the gland has suppurated, and when certain indications of pus are present, that the greatest benefit will result from its use. I have never seen it applied at the commencement of the inflammation, or when the gland is small, hard, and painful, nor do I imagine that at this incipient stage much benefit would accrue from its application; but frequently have I seen cases of bubo, when a large collection of pus had

formed, and when the skin covering it had become thin and tense (the surgeon scarcely considering himself justifiable in not at once plunging in a lancet and evacuating the matter), end in resolution, the pus become absorbed, and the case give no further trouble; and that after a single application of the corrosive sublimate.

The mode of treatment is simple: a piece of lint, about two inches long, and one broad, is dipped in a 10 grain solution of the bi-chloride of mercury, and laid on the bubo. The only directions given to the patient are to keep it constantly moist with the solution, and as long as he can bear it. In a short time it begins to smart considerably, and generally after an hour he takes it off, being unable to endure the pain any longer. This period is quite sufficient for any beneficial result which may be expected. On the following morning, the cuticle will be found raised, and the skin beneath will present a florid, granulating appearance: nothing need be now applied but cold water dressing, which in the majority of cases above described will alone be sufficient to complete the cure.

When cases of incipient syphilitic bubo are admitted into hospital, it is no doubt good practice to attempt their dispersion by means of cold lotions and leeches, assisted by purgatives and antimonials: but these means frequently fail; and if after two or three days' trial no progress has been made, I have generally found that much time and trouble will be saved by at once forwarding the abscess as speedily as possible by means of poultices and fomentation, and then, assured that pus has collected, to apply the solution of corrosive sublimate as directed.—*Trans. Med. and Phys. Society of Bombay.*

MIDWIFERY.

Cases of Hemorrhage after Delivery accompanied by severe after-pains. By Dr. Francis H. Ramsbotham.—It is generally believed, and with truth, that the more strongly the uterus contracts after delivery, the less chance is there of hemorrhage occurring; and the greater, therefore, is the safety of the patient in respect to that source of danger. This aphorism, however, only applies to those cases in which the uterus is empty; if it contain any solid body—a polypus, for instance, as I have before shown, a portion of placenta adherent to its surface, a large piece of the fœtal membranes, or even a mass of tough, fibrinous coagula—it may contract most powerfully—indeed, inordinately—with much more pain than usually attends its action after the child's birth; and yet, at the same time, there may be such a discharge of blood flowing as to place the patient's life in imminent peril.

These cases are embarrassing to the young practitioner, especially as there exists among authorities on the obstetric science, a great diversity of opinion in regard to the treament of floodings after the removal of the placenta; and this want of concord must necessarily tend in no small degree to confuse his judgment. Some, as Denman, Dewees, and Robert Lee, think the introduction of the hand for the purpose of clearing the

uterine cavity too harsh a measure to be admissible under such circumstances; while others, as Burns, Collins, Gooch, Merriman, and my late father, describe the proceeding as being not only safe in itself, if carefully performed, but as the speediest and most effectual means of averting the impending danger. Others, again, as Blundell, Ingleby, and Churchill, think it should never be attempted, unless there be "inexorable need," or "a very pressing emergency," or till "all other means have failed."

I propose to report a few of the cases that have occurred in my practice, where a quantity of tough coagula, collected within the uterus, gave rise to intense suffering and other alarming symptoms, as a type of the kind of cases to which I refer, and as an exemplification of the practice that I have followed for some years with very satisfactory results.

The fact of my having seen the first seven cases that I shall relate, all in one year, is a proof that they are not very rare, but that they are met with often enough to make them well worthy of special consideration.

Case 1. On February, 2d, 1853, at five A. M., I was sent for to Mrs. S., aged 32, in the neighborhood of Drury-lane. She had been in labor of her first child for two days, the membranes having broke on the first accession of pains; and she had been rather officiously treated, for her attendant had exhausted his stock of ergot, and had given her a considerable quantity of gin and water; she had taken two large doses of laudanum; and he had been rubbing some extract of conium on the cervix uteri; he was about to bleed her when I arrived. I found her walking about the room, unable to sit from the pressure of the child's head, looking weary. She had not slept for two nights, but the pulse was under 90, and there was no indication of exhaustion. The os uteri was not quite dilated, though the head was low in the pelvis; the scalp was puffy and swollen; the vagina and perineum very rigid; and the pains very frequent and irritating. I ordered her a little effervescent medicine, and directed that she should be kept quiet on the bed, and that the external parts should be fomented. At two P. M. I ascertained that the pains had been much more natural and efficient since the meddlesome practice had been discontinued; the os uteri was entirely dilated, the vagina much more lax, and the head extending the perineum. The child was born at three. The placenta was expelled naturally in fifteen minutes, but the uterus soon relaxed, and a quantity of blood collected within its cavity. Pressure and cold caused it to contract; still there was a draining of colored serum going on, and the uterus was acting at intervals very strongly, with much pain. After waiting nearly half an hour, without any relief to the symptoms, during which time she became rather faint, I introduced my hand fully into the uterine cavity, and removed four or five ounces of firm, fibrinous coagula. The draining then ceased, as did the pains also; and she soon went to sleep. It was necessary to introduce the catheter once the next day; but she recovered perfectly well.

Case 2. On April 27th, 1833, at two P. M., I was requested to see a patient of the Royal Maternity Charity, who had been delivered of her

first child by one of the midwives, about two hours before, after an ordinary labor. The placenta came away without assistance, in less than half an hour; but the uterus relaxed, and she flooded much. The midwife had used cold applications and compression of the viscus; and although these means had produced strong contraction, attended by unusual pains, they had not put a stop to the discharge. The patient was complaining of acute suffering each time the uterus acted, was faint, pale, and in a state of jactitation. I, therefore, introduced my hand at once into the cavity, and took away a mass of firm coagula, the size of a man's fist. The violent pains ceased immediately; the bleeding was stayed; and, after experiencing for a few days a pulsating pain in the head, she gradually recovered.

Case 3. On the next day, April 28th, at eleven P. M., a medical friend sought my assistance for Mrs. A., Burr-street, Wapping, in labor, of her ninth child, at full time. He had been called to her an hour and a half before my arrival, and found her flooding violently. The discharge was much arrested when I saw her, though it had not quite ceased. The pains were feeble; and I could just touch the edge of the placenta at the posterior part of the neck of the uterus, the mouth being dilated to the size of a crown-piece. As there was no faintness, I allowed the case to go on uninterfered with for an hour. At the end of that time, however, the hemorrage returned, and I therefore ruptured the membranes. The uterus now began to act more powerfully, and the child was born at half-past two. The placenta was expelled into the vagina in half an hour, whence I removed it; but the uterus relaxed, and flooding came on. For nearly two hours I used compression with my hand, and continued to apply cold vinegar and water without intermission. During a great part of this time the uterus relaxed and contracted alternately; at last it became quite firm, though larger than it should have been. Notwithstanding its hardness, and the powerful spasmodic action that it took upon itself, the hemorrhage did not cease. She was in great pain every time a contraction occurred, became restless, and began to yawn. Feeling anxious for her safety, I passed my hand within the uterus, and brought away a quantity of very tough coagulum, as much as would fill a common-sized tumbler, part of which was almost white, the red globules of the blood having been squeezed out of it. From that time the pain and discharge both ceased. I left her at seven o'clock and her restoration was unchecked.

Case 4. On May 11th, 1833, at half-past eleven P. M., a physician residing in the city came to me in great haste, to beg I would go immediately to the assistance of his wife, whom he thought dying. She had been delivered of her third child, under the care of a mutual friend, nearly two hours. The placenta passed in twenty minutes after the infant; but she was soon seized with violent uterine pains, accompanied with considerable hemorrhage; and she became faint. I found her very pallid; the pulse at the wrist was scarcely perceptible; the uterus was acting every four or five minutes with excruciating agony; and there was a copious serous discharge from the vagina, only slightly tinged with

red. The uterus was much larger than it ought to have been, but exceedingly firm. Believing it to contain a quantity of coagulated blood, I proposed the introduction of the hand, for the purpose of emptying the cavity. This was readily acceeded to; and I removed more than half a pint of very tough, solid clots. I had some difficulty in passing my hand through the mouth; and some, also, in separating the fibrinous matter from the internal membrane, for it adhered with considerable tenacity, however, I got it all away. From that time the agonizing pain abated, the hemorrhage ceased by degrees, she soon fell into a slumber, and had a good and quick recovery.

Case 5. On July 24th, 1833, at half past 11 P. M., a medical friend called me to the wife of a tradesman in Bishopgate-street, who had been delivered of her fifth child four hours. I was told that the placenta had come away in ten minutes after the child's birth, without any trouble or hemorrhage; that her attendant had left her, and was recalled in an hour, and that he then found her suffering from severe after-pains, with considerable flooding. When I arrived, she was very faint, cold, and restless; the after-pains were frequent, and very distressing; and the uterus was large and hard. Being quite sure that it was not empty, I passed my hand within the cavity, and took away a large quantity of firm coagula, among which were entangled some filaments of placenta, that had been adherent to the uterine surface. I met with much resistance in introducing my hand, in consequence of the strength of the uterine contractions, and had some trouble also in separating the pieces of placenta, on account of the firmness of their adhesion. But the organ having been emptied, the pain and hemorrhage immediately ceased, and the woman was restored without a bad symptom.

Case 6. On July 26th, 1833, at seven P. M., I was summoned to Mrs. J., in Aldgate, whom I had engaged to attend. It was her fifth child; the membranes broke on the 24th, and she had been uneasy ever since. Labor was considerably advanced, and she was delivered at half-past eight. The placenta was expelled without hemorrhage in twenty minutes, and I left her before ten. In an hour I was sent for again. She was then suffering most intensely from after-pains, was faint, and frequently vomiting. The uterus was large and very hard. She had evidently lost a great quantity of blood since I had left her, and there was a copious flow still going on. I introduced my hand without loss of time, carefully into the uterine cavity, and extracted about half a pint of heavy, tough coagulum. The pain instantaneously left her, the hemorrhage abated gradually, and at twelve o'clock she was in a state to admit of my departure. She suffered from symptoms of reaction for a few days, but got about, as early as she ever had done after any of her previous confinements.

Case 7. At one P. M., August 18th, 1833, my assistance was sought by a medical practitioner, for Mrs. C., Hoxton, who had been delivered of her first child three hours. The placenta had been retained by irregular contraction, and removed from the uterus by the hand: previously

to which she had lost about two pounds of blood. When I arrived, she was faint, cold, and pale; the pulse was very small; the uterus was excessively hard, and rather larger than natural; there was an uninterrupted draining going on, and she was suffering excruciating pains at intervals, evidently proceeding from uterine contractions. She had taken three drachms of laudanum without relief. I passed my hand into the cavity with considerable ease, notwithstanding the strength of the uterine contractions, and removed a quantity of the same kind of tough, fibrinous coagula, as existed in the other cases that I have narrated, considerably larger than an orange. She felt immediate freedom from pain, and the discharge ceased almost as suddenly. She became a little faint, but soon rallied; at four she was sleeping comfortably; and her recovery was uninterrupted.

In all these cases there was a draining of blood going on at the same time that the uterus was firm and comparatively small, and while the after-pains were frequent and powerful,—a condition of things usually described as being incompatible with dangerous hemohrrage. In all there was a considerable quantity of heavy, tough, coagula within the cavity, and in all the pain ceased immediately the uterus was emptied, the discharge being almost entirely put a stop to equally speedily.

The pain no doubt is produced by ineffectual attempts on the part of the uterus to expel the offending mass within its cavity; and the very efforts set up for this purpose rather retard than further its escape; for, by compressing the coagula so powerfully, the more fluid parts are squeezed out, the firmer remaining behind: and the fibrinous clot thus left clings with such tenacity to the uterine walls as to be almost as difficult of separation by the unaided uterine contractions as a piece of adherent placenta itself would be. Hence the necessity for the manual removal; hence, also, the sudden cessation of the hemorrhage, and of the intolerable pains subsequent on that measure being adopted.—*Med. Times and Gazette*, March 26, 1853, p. 316.

On a New Mode of Induction of Premature Labor in cases of Deformed Pelvis.—Dr. Atthill read a paper on this subject before the Dublin Obstetrical Society, in which he drew the attention of the Society to the old methods of induction, and enumerated the various objections to each of these modes. He then detailed a case in which the douche bath (after the manner of the Vienna Lying in Hospital) was successfully used. The case was that of a woman four feet and a half in height, and greatly deformed from angular curvature of the spine, the result of caries of the vertebræ, from which she had suffered when twelve years old. The curvature included the last dorsal and all the lumbar vertebræ; and there also existed an appreciable diminution in the pelvic space. In September, 1849, she was admitted into the Rotundo Lying-in Hospital for her first confinement, when it was found necessary to lessen the head, after a rather protracted labor. In September, 1850, she was again admitted, and this labor was but a repetition of her first. It was then explained to her that she could not give birth to a living child at full term, and she was recommended that, if she again became pregnant, she

should come into hospital when she was seven months gone with child, and submit to the induction of premature labor. Accordingly, in June, 1851, she again presented herself in the seventh month of gestation, but before any steps could be taken her husband removed her, having been told that if she submitted to any operation she might die: so that she was lost sight of until the 26th of August following, when she was brought into the hospital in strong labor, and again for the third time the crotchet had to be used. On being discharged after her recovery, the necessity of her presenting herself at the termination of the seventh month (should she again become pregnant), was strongly urged upon her; and she acted according to this advice, for she came to the hospital on the 10th of September, 1832, being seven months pregnant. It was now determined to try Kiwisch's method of induction—the douche bath. The apparatus used in this instance was a tin vessel, capable of containing two gallons of water, and to this was affixed a flexible tube, furnished with a stop-cock, terminating in a bone nozzle about five inches in length. The vessel was raised about five feet above the bed on which the patient lay supine, the pipe of the tube was introduced into the vagina, the stop-cock turned, and the stream directed against the os uteri by means of the index finger inserted along with the nozzle. Saturday, the 18th of September, was the date of the first application, and even this seemed to produce a marked effect, for, on examination immediately after, the os uteri felt soft and relaxed. The douche was repeated, morning and evening, regularly, until the following Friday (except on Wednesday night, when the tube by some accident got out of order). After the second application, the os began to dilate, and continued to increase a little in size on each application, until the sixth douche, when it had attained the magnitude of a half-crown, but then it ceased to enlarge. On Friday afternoon, having been subjected twelve times to the douche, she complained of pain in her back, and asserted that she felt certain her labor was approaching. Next morning, at 11 o'clock, the pains came on regularly, though feebly; at 7, P. M., the membranes ruptured, the os being fully dilated, and the pains grew most powerful; the head gradually descended into the pelvis until 9 P. M., when it almost rested on the perineum, but, although uterine action was strong, it ceased to advance further; and at 11 o'clock, no progress having been made for two hours, she was delivered by the forceps (while under the influence of chloroform), of a small, living female child about the seventh month. The two first days it had to be spoon-fed, but afterwards it took the breast freely. The mother recovered without the slightest drawback, and she and the child went out well on the ninth day. Dr. Atthill said, that, comparing this case with those given by Dr. Arneth of Vienna, it appeared that it required the exact number of douches (viz, twelve) to bring on labor, which he found to be the average. The height from which the water flowed was, however, much less than that which he directed; and Dr. Atthill consequently considered that any great height was unnecessary.

The result of this case Dr. Atthill thought most satisfactory, and to the method of induction he considered there could be no valid objection,

the worst result being failure, and that this was very unlikely to occur, for, out of the six cases recorded by Dr. Arneth, in only one did the douche fail. Dr. Atthill preferred this mode of induction to any of the other plans recommended by authors, because no possible injury could be done by the employment of the douche bath to either mother or child; and in its application it was simple in the extreme. He concluded by remarking, that, since writing the foregoing paper, he had seen in the Lancet the details of a case in which the douche had been successfully applied by Dr. Tyler Smith of London; and the only difference that existed in Dr. Smith's case from that just related was, that alternate douches of hot and cold water were used by Dr. Smith; and that this might have been the reason why only five applications were necessary: but that this fact was by no means proved, for in one of Dr. Arneth's cases only two were required. Dr. Atthill considered, however, that it would be worth while to test the fact by further observations.

Dr. CHURCHILL remarked, that Dr. Simpson of Edinburgh was in the habit of using effectually a simple form of syringe for such purposes, which he would consider preferable to the syphon douche, as being more simple and more easily applied; it generally brought on labor after four, five, six, or eight applications.

Dr. MCCLINTOCK stated, that the only objection which, in his opinion, could be urged against this method of inducing premature labor was, the facility, certainty, and safety with which it could be made use of, for criminal purposes, were it generally known to the public.

On the Occurrence of Hernia Bronchalis During Labor, By H. R. RUMP, Esq.—Hernia bronchalis, goitre vesiculaire, goitre aerien, hernia gutturalis, and bronchocele vera, are synonymous for a peculiar protrusion of the mucous membrane lining the air passages, either through the crico-thyroidean membrane, or between two of the cartilaginous rings of the trachea; forming externally, in front or on either side of the throat, a soft tumor, not tender to the touch, and without discoloration of the integuments. The first inscription of this very remarkable tumor was given by Larrey in his *Clinique Chirurgicale*, tome xi. p. 81. The subjects of this disease who came under his observation during the war in Egypt, were some French soldiers and Mohammedan priests; persons who had been in the constant habit of calling at the highest pitch of the voice. This continued vocal effort he regards as the sole cause of the disease. He says—"Notwithstanding the statement of the authors who have written upon goitre, we have accurately observed and recognized that which has been designated under the name of bronchocele, but which might be termed, with greater propriety, pneumo-guttural hernia. It consists of one or more air tumors, which form in front of the throat, and principally by the side of the larynx. These tumors, which sometimes acquire a considerable size, may be attributed to the arrangement of the parts, and to the more or less violent efforts occasioned by the cries or songs of the individual. The air which has served for the purpose of inspiration, being afterwards, by the effort of expiration, driven outwards with all the modifications necessary to impart to the cries or the voice the desired intonations, gradually produces these tumors."

The diseases or affections likely to be confounded with hernia bronchalis are—1, bronchocele; 2, the cystic disease of the thyroid gland; 3, a cyst situated beneath the deep cervical fascia, and in proximity with the carotid sheath. It may, however, be readily distinguished from these diseases, and its true nature accurately ascertained by observing—1, that it greatly diminishes in size, or entirely disappears, upon the application of gradual and uniform pressure; 2, that on a deep inspiration being made, the tumor ceases to be prominent, the air being withdrawn from its interior, its walls collapse, and scarcely any swelling is perceptible; 3, that during a strong expiration, the nostrils and the lips being at the time compressed with the fingers, the opposite condition ensues, the air rushes into the interior of the hernia, and it becomes tense and greatly distended. With aneurism it could scarcely be confounded.

From the facts which I have been enabled to collect, it appears that hernia bronchalis occurs during the second stage of severe and protracted labor, in which uterine action is very powerful, and where considerable resistance is offered to the passage of the head, either by a rigid and unyielding perinæum, or by contraction of the pelvic outlet. The same circumstances which favor laceration of the perinæum, I apprehend may be productive of hernia bronchalis. During the violent straining of the last pains of labor, the diaphragm is fixed, the abdominal muscles powerfully contracted, the glottis closed, and respiration for a time suspended; the cavity of the thorax becomes diminished, and the air contained within the lungs is forced upwards against the inferior surface of the glottis, carrying with it, and elevating the larynx to a certain extent, thereby producing a *certain amount* of elongation of the trachea, separation of its rings, and consequent attenuation of the tissues; the same force will render the cricothyroidean membrane tense, and place it in the most favorable condition for separation of its fibres. The accuracy of the foregoing remarks, as regards the effect of straining upon the larynx and trachea, may be tested by personal experiment. —*Assoc. Med. Jour.*

MISCELLANEA.

On Instantaneous Insanity.—Intimately connected with the subject of homicidal mania, are some observations on instantaneous insanity, contained in an article by Dr. Boileau de Castlenau, in the *Annales d'Hygiène.* All the instances of sudden and uncontrollable impulse adduced, are illustrations of homicidal mania. The development of these states is described as being preceded by no reasoning, by no process of thought naturally tending to suggest such an action, nor by reasoning in opposition to the laws of reason; as occurring where no predisposition to insanity existed; as being dreaded and opposed by the individual, and published by him, that precautions might be taken to render innocuous the destructive impulse which he could not resist. Marc, one of the highest medical authorities on this subject, Talma, the celebrated tragedian, and Professor Lichtenberg, are quoted, as having experienced this blind appetite to destroy the life of others. A large number of the

cases attributed to this momentary insanity occur during some uterine disturbance; or immediately subsequent to deep congestive sleep. Georget's aphorism—that a horrible act, a murder, or an arson, committed *without cause, without motives of interest*, by an individual *whose actions have been previously correct*, must be the result of insanity, is lauded; but the author's own conclusions are:—1. Instantaneous alterations of the mental faculties occur, inducing instantaneous insanity. 2. The first manifestations of this sudden change may be what is styled a crime. 3. Persons committing such an act should be placed in an asylum specially set apart for such cases. 4. They should remain there until examined and certified by a special jury. Guislain gives an instance where a murderous propensity was developed in a child four years old, who attacked another aged six months.—*Assoc. Med. Jour.*

Benzoic Acid in the treatment of Rheumatic Sclerotitis. By WHITE COOPER, Esq.—Space will not admit of my dwelling upon the treatment, but I must, in conclusion, allude to a remedy which, at the suggestion of my colleague, Mr. Ure, has recently been employed by me. I mean benzoic acid; and I will briefly narrate the circumstances under which it was tried. It was in the case of a member of Parliament. His condition, when I first saw him, on the 14th September, was as follows. The conjunctiva and sclerotica were intensely inflamed, the corneal zone being strongly marked. The iris, naturally blue, had a green tinge, but was not otherwise altered; the pupil was contracted, and sluggish; the globe excessivley tender; he had much mistiness of vision, intolerance of light, and profuse discharge of scalding tears. There was great supraorbital pain, involving the whole side of the head, and greatly aggravated at night. This state of things had existed a fortnight, and he was very low, with cold skin, and feeble pulse.

The history of the case, and the symptoms, indicated rheumatic sclerotitis, which had gradually involved the iris and the choroid; and I thought it a favorable opportunity for trying benzoic acid. Six leeches were first applied to the mastoid, and he was then ordered to take half a drachm of powdered benzoic acid thrice a day. He began this on a Tuesday. On the Thursday there was a manifest improvement: he had passed a good night, and could face the light; whilst the local inflammation had materially decreased. The powders were stopped on the Friday, as he complained that they made him sick; the improvement, however, continued. The only other medicine ordered, was a little gray powder; and on the Monday following—the sixth day after fairly commencing this treatment—the patient left town with his eye almost entirely free from redness and with merely some haze of vision, all which symptoms, I subsequently learnt, disappeared in the course of a week.

PART FOURTH.

AMERICAN MEDICAL RETROSPECT.

PATHOLOGY AND PRACTICAL MEDICINE.

On the Microscopical Constituents of Black Vomit—Condition of the Secreting Cells of the Liver in Yellow Fever. By A. CLARK, M. D., Prof. of Physiology and Pathology, in the College of Physicians and Surgeons of New-York. The investigations of Dr. Clark, as reported in the *N. Y. Medical Times*, were made upon a portion of the materials removed from the stomachs of the persons who died of yellow fever at the New-York Hospital last winter.

"The first of these specimens was not highly colored. After standing for a few hours, it deposited a brown sediment, leaving the supernatant liquid a little milky, but nearly transparent. This fluid was acid, and appeared to derive its opaline hue from minute granules of organic matter—probably debris of the epithelial lining of the stomach—and minute particles of ingesta, and a few very minute oil globules. The sedimentary matter, examined with a magnifying power of 400 diameters, was found to consist mostly of the epithelial lining of the stomach and its crypts (some cells of which were granular and breaking up, some in a normal state; some were separated, floating free, others were united in sheets of limited extent), and of a fine granular matter, which was probably the disintegration of epithelial cells. Besides this, there was a small amount of two kinds of coloring material, the one of a dark yellowish brown, the other of nearly a jet black color. These will be described hereafter. This specimen contained no fungoid growths, no animalculæ, and nothing that could be referred to the ingesta, except a few starch corpuscles, and a few globules of fat or oily matter. The fluid of this specimen was decidedly acid, and contained the merest trace of albumen.

The second specimen was mostly sedimentary matter when it was brought to me. The color of it was a dark brown, almost black. The small quantity of supernatant fluid was even more acid than the first, and was slightly albuminous. The sediment examined in the same manner as the first, was found to contain, like the other, the epithelium of the stomach and its crypts, in three different forms; the conoidal cells of the lining membrane; a few cells from the larger sections of the crypts,

of large size (that is $\frac{1}{1300}$ to $\frac{1}{1000}$ of an inch in diameter); and flat cells of smaller size (from $\frac{1}{2}$ to $\frac{1}{4}$ the former) from the diseased and minute divisions of the crypts. These bodies were seen sometimes in sheets of moderate extent, sometimes as individual cells. Many of them were granular, and a few of the larger flat cells contained oil globules. The fine granular matter, so abundant in the first specimen was seen also in this, but in smaller quantity, and probably should be referred to the same source, the disintegration of some of the cells.

The substances that did not belong to the stomach tissue were the following:

1st. What I am compelled to regard as blood corpuscles. (Fig. 1.) These were of a uniform dark yellowish-brown color, and existed in great abundance, constituting from one-sixth to one-quarter of the mass. Their forms varied from the disc-shape to the globular. Some were isolated, but more were grouped. Some were no more than a third the size of the largest. Some were in the process of disintegration, and formed nebular spots of considerable size, mostly granular; yet in the midst of the granules were small globular and large disc-shaped bodies. But all had the same dark brown color, and it was easy to trace a regular gradation from the unquestionable disc-shaped blood corpuscle, through the larger and smaller globular bodies to the granular matter.

2d. Numerous scales of opaque black matter, having no uniform shape, and susceptible of fractnre in any direction. (Fig. 2.) Regarding the nature of this substance, I am not prepared to express opinion, but I can hardly doubt that it is the product of some chemical change in the coloring element of the blood. It was abundant in both these specimens, in the second constituting at least one-twelfth of the whole bulk of the sediment.

This pigment matter is often met with in other pathological states of the system. It abounds in the "bronze liver" of remittent fever. It is occasionally seen in the urine; and it is frequently easy to trace gradations in its color from the dark brown of the corpuscles above described, to the jet black which usually distinguishes it. I am not aware that it has received a name, unless it should be considered a modification of *melanine* or *melanose*.

To these two constituents must be ascribed the peculiar color in both these specimens. And I cannot doubt that they are alike the result of sanguineous effusion from the lining membrane of the stomach.

3d. There was a large quantity of a peculiar crystalline matter, sometimes in the form of a brush, but oftener flattened, as if spread by the weight of the glass cover, white in color and nearly transparent. This I suppose is the product of digestion. (Fig. 3.) It was found in both the specimens, and has been often seen in the materials removed from the stomachs of persons dying of other diseases.

4th. A vegetable growth in linear and rather stout joints (Fig. 4), the sections commonly separated, but often united, as by a hinge. This element was in great abundance in the second specimen, but was not seen in the first. It disappeared, however, entirely after the lapse of three weeks, leaving only the substances described above.

Through the kindness of Dr. Swett, I have had an opportunity to examine the structure of the liver in one of these cases. It had the usual yellow or *café au lait* appearance, so well marked that Dr. Swett had it figured in colors, as a specimen of its class. Its aspect did not differ very materially from that of the chronic fatty liver of drunkards. It was not, however, materially enlarged; and on close examination the lobules of Kiernan could still be distinguished on its surface and section, by the minute vessels which surround them.

On microscopical examination, the only marked change demonstrated was a fatty state of *all* the secreting epithelial cells, and an abundance of free fat globules of large and small size, covering and obscuring every thin section that was made of it. The whole tissue was thoroughly infiltrated with oily matter, and scarcely a cell could be seen that was not loaded with these globules. Three of these cells are represented in the accompanying diagram. (Fig. 5.) The condition of these cells was in all respects identical with that observed in ordinary cases of chronic fatty liver, and the examination suggested the inquiry whether the state of the liver in yellow fever should not be called *acute fatty degeneration.* Perhaps the organ in this instance may have been fatty before the attack of the fatal disease. Still, the observation is, I believe, worth recording, that those who have larger opportunities of studying the disease than I possess, may verify or correct it. I will not assume that a single case can demonstrate a general fact, but will propose the question for solution by our southern brethren: Is not the change so constantly observed in the liver of those dying of yellow fever, an *acute fatty degeneration?*

Observations on Non-recurrence of Secondary attacks of Dysentery, By Austin Flint, M. D.—In a Clinical Report on dysentery, based on an analysis of forty-nine cases in the course of publication in the *Buffalo Medical Journal*, Prof. Flint has a section devoted to observations on the "Recurrence of the Disease," which we copy entire.

The subjects of this section are interesting, and so far as I know have not been investigated by means of recorded facts. What remote effects, if any, in the organism, follow an attack of dysentery? Does it beget a predisposition to any other disease? Does it impair the constitutional vigor? Is the patient afterwards liable to renewed attacks of the disease, or is the susceptibility to the action of the cause, or causes, lessened, or destroyed, so that the morbid processes having once taken place, there is greater security, if not entire exemption thereafter? These are questions interesting in themselves, and important in their pathological bearings. The facts in this collection of cases pertaining to these subjects are not numerous, but few as they are, they lead to the belief that they involve something more than coincidences: that they point to laws of the disease which do not appear, as yet, to have received attention. I will proceed to present the results developed by the analysis.

Of the thirty-eight cases ending in recovery, in sixteen the patients either continued under observation, or definite information was obtained respecting their subsequent health for periods varying from one year to thirteen years. To be more precise, with regard to these periods, the duration of the subsequent history in the cases respectivelyare as follows: thirteen years, one case; seven years, two cases; five years, two cases; four years, nine cases; two years, one case, and one year one case. In all, sixteen cases. Of these sixteen patients only one has died. This patient died with tuberculosis of the lungs, four years after recovering from dysentery. Of the remaining fifteen cases, in all the health has been good during the periods, respectively, during which the patients remained under observation, or within knowledge. I mean by this, that not one has suffered from any other important disease, and in nearly every instance there has been excellent health.

Not one of these fifteen patients has experienced a second attack of dysentery. The result is rendered somewhat more striking by the fact that, exclusive of the case in which the date of the disease was but a year since, all the patients have been for several years past within the sphere of an epidemic influence, the disease, as already stated, having prevailed more or less, as an epidemic, in this city, in the autumnal months for the last four years. I can also call to mind several cases of dysentery occurring at least four years since, the histories of which were not taken, the patients, in the mean time, being under observation. In none of these instances has the disease been twice experienced. *I have not yet met with a second attack of dysentery.* It is worthy of notice that three of the cases in this collection occurred in one family at different dates, viz., one case, thirteen years ago; one four years and one two years. In these instances new subjects were attacked, they escaping who had previously had the disease.

It would seem, from these facts, that an attack of dysentery does not exert an unfavorable influence on the organism, that patients are not rendered thereby prone to any particular disease, but, on the other hand, enjoy good health. It would also seem that patients are not liable to a repetition of the disease.

I would not be understood as presenting these inferences in the light of established truths. The number of observations is too small to warrant deductions which shall represent fixed laws of the disease. But, as already remarked, it is difficult to account for the facts on the hypothesis of their being due to mere coincidence; and I repeat that the facts point to the existence of laws which remain to be settled by further investigation. We are at least justified in concluding, from the data before us, that deterioration of the health subsequent to dysentery is not the general rule, and that an attack does not lead to any increased susceptibility to the cause or causes of the disease.

On the Influence of Parasites in the Production of Disease. By Prof. Joseph Leidy, M. D.—In many animals entozoa and entophyta are almost never absent, and probably when in their natural habitation, and few in number, or not of excessive size, are harmless, as observed by Dujardin in the introduction of his excellent work on Intestinal Worms: "Les helminthes se développent dans un site qui leur convient, sans nuire plus que les lichens sur l'écorce d'un arbre vigoureux. Ils ne peuvent devenir nuisibles, généralement, que par suite d'une multiplication excessive, laquelle semble alors être une des conséquences d'un affaiblissement provenant d'une tout autre cause, d'une mauvaise alimentation, du séjour dans un lieu froid et humide, etc.: sans cela, les helminthes naissent et meurent dans le corps de leurs hôtes, et peuvent paraître et disparaître alternativement sans inconvénients."

Many important diseases have been supposed to originate from parasitic animals and vegetables. The former are not the true entozoa, for these are too large, and may be detected by the naked eye, but they are considered to be animalculæ so small that they cannot be discovered even with the highest powers of the microscope. But, independent of the fact that the existence of such entities is a mere suspicion, none of the well known animalculæ are poisonous. At various times I have purposely swallowed large draughts of water containing myriads of *Monas*, *Vibrio*, *Euglenia*, *Volvox*, *Leucophrys*, *Paramecium*, *Vorticelli*, etc., without ever having perceived any subsequent effect.

The production of certain diseases, however, through the agency of entophyta, is no longer a subject of doubt; as in the case of Muscardine in the Silk-worm, the Mycoderm of Porrigo favosa in Man, etc.; but that malarial and epidemic fevers have their origin in cryptogamic vegetables or spores requires a yet single proof. If such were the case minute vegetables and spores, conveyed through the air, and introduced into the body in respiration, could be detected. The minutest of all known living beings is the *Vibrio lineola* of Müller, measuring only the 36,000 of an inch, and the smallest known vegetable spore is very much larger than this, whilst particles of inorganic matter can be distinguished the 200,000 of an inch in size.

I have frequently examined the rains and dews of localities in which intermittents were epidemic upon the Schuylkill and Susquehanna rivers, but without being able to detect animalcules, spores, or even any solid particles whatever. I have examined the air itself for such bodies, by passing a current through clear water. This was done by means of a bottle, with two tubes passing through a cork stopper; one tube dipping into the water, the other reaching not quite to its surface. By sucking upon the latter tube, a current of air passed through the former, and was deprived in its course of any solid particles. Ordinarily, when the atmosphere was still, early in the morning, or in the evening, neither spores nor animalcules could be detected. When piles of decaying sticks or dry leaves were stirred up, or the dust was blown about by the wind, a host of most incongruous objects could be obtained from the air; none, however, which could be supposed capable of producing disease.

To assert, under these circumstances, that there are spores and animalcules capable of giving rise to epidemics, but not discernible by any means at our command, is absurd; as it is only saying in other words that such spores and animalcules are liquid and dissolved in the air, or in a condition of chemical solution. That the air may be poisoned by matters incapable of detection by the chemist, is proved by the emanations from such plants as the *Rhus vernix*, *Hippomane mancinella*, etc. —*Smithsonian Contributions to Knowledge.*

OBITUARY.

Death of Prof. N. Chapman, M. D.—At his residence in the city of Philadelphia, on the 1st of July, aged 73 years. The declining health of Professor Chapman, for some years past, and his advanced age, had long since prepared us, (says the *Medical Examiner*, from which the following sketch is partly copied), for the announcement of his death. He had been, for the last three years, entirely withdrawn both from professional duties and general society, and his death was the result rather of a slow and gradual decay, than of any positive disease.

Dr. Chapman was a native of Virginia, where he was born, in Fairfax Co., on the 28th of May, 1780. His family was of an old and respectable English stock; his paternal ancestor, who came to Virginia with the first colony, having been a captain of cavalry in the British army, and the youngest son of a cousin-german of Sir Walter Raleigh.

Dr. Chapman, received his early education at the Classical Academy of Alexandria, founded by General Washington, where he passed six years. He subsequently spent a short time in two colleges, though not long enough, as we have heard him say, to owe either any obligation. He came to Philadelphia in the autumn of 1797, and commenced the study of medicine with the late Professor Rush, of whom he became a favorite pupil. He continued three years in the office of Dr. Rush, and in attendance upon lectures at the University of Pennsylvania, from which he received his degree in the spring of 1800. The doctor's thesis was upon *hydrophobia*, written at the request of Dr. Rush, in answer to an attack upon his favorite theory of the pathology of that disease. Dr.

Chapman had previously prepared another thesis, on the "*Sympathetic Connections of the Stomach with the rest of the Body*," which he afterwards read before the Philadelphia Medical Society. This contained the substance of his peculiar views on fever and other diseases, as well as the modus operandi of medicines. While a student, Chapman found time to become a contributor to the Portfolio, a magazine of some celebrity in its day. His contributions, under the signature of Falkland, obtained considerable popularity.

In 1801, Dr. Chapman went abroad, where he spent four years—chiefly in Edinburgh and London. He remained a year in London, the private pupil of Abernethy, and thence passed to Edinburgh.

Dr. Chapman returned to the United States in 1804. He established himself in Philadelphia, and in 1808, formed a matrimonial connection with Rebecca Biddle, daughter of Col. Clement Biddle, from which, during a period of nearly fifty years, he derived the highest degree of domestic happiness. His success in practice was rapid, and he became almost immediately the favorite physician of a large portion of the higher classes of Philadelphia, with whom he enjoyed a popularity as a practitioner, which has, perhaps, never been equalled here. A rare combination of personal qualities—attractive manners, wit, great conversational powers, and the kindest feelings—made Dr. Chapman as personally popular as he was professionally eminent.

The year of his return to the United States, 1804, he gave a private course of lectures on obstetrics, which proved so popular that, in 1806, at the age of twenty-six, he was elected adjunct to the Professor of Midwifery in the University of Pennsylvania, and soon afterwards he was elected to fill the chair of Materia Medica. At the death of Rush, in 1812, he was transferred to the chair of Theory and Practice, which he filled from that date till his resignation in 1850. Professor Chapman's lectures, delivered as they were annually to large classes, for a period of nearly forty years, are of course familiar to no small portion of the profession of the United States. They have been given to the public in various forms; many of them were published at length in the early volumes of this Journal, and a compendium of them was subsequently issued, under the editorial supervision of Dr. N. D. Benedict.

In addition to his course at the University, Dr. Chapman for a long period gave clinical lectures in the hospital of the Philadelphia Alms House. For nearly twenty-five years, also, he delivered a summer course of lectures in the Medical Institute of Philadelphia.

Dr. Chapman has filled numerous honorable appointments in medical and learned societies. He frequently occupied the post of President of the Philadelphia Medical Society, and was the successor to Duponceau in the eminent distinction of the Presidency of the American Philosophical Society. He was also chosen first President of the American Medical Association.

His "*Elements of Materia Medica and Therapeutics*" was the first work of the kind which was produced in this country, and we are proud to say that its literary as well as professional merits deservedly secured to its author a high rank among the most enlightened and accomplished of physicans; and of it, it was truly said, that "for tasteful and elegant

composition—for ingenious speculation, and for general interest, it stands unrivalled by any work of the kind in the English language." This work was first published in 1817, since which period it has passed through seven editions—one of them surreptitious. The author's views on the modus operandi of medicines are of the ultra-solidist school, and, it is hardly necessary to add, not in accordance with received opinions.

In 1820 Dr. Chapman commenced the publication of the "Philadelphia Journal of the Medical and Physical Sciences," which he continued to edit for many years. This Journal was undertaken with liberal views—the doctor never received any salary for his services. He was subsequently an occasional contributor to different periodicals.

In the spring of 1844 he published a volume of "*Lectures on the More Important Diseases of the Thoracic and Abdominal Viscera*," and in the fall of the same year another, entitled "*Lectures on the More Important Eruptive Fevers, Hemorrhages, and Dropsies, and on Gout and Rheumatism.*" In addition to these writings he was the American editor of several foreign medical works.

Death of Charles Caldwell, M.D.—At his residence in Louisville, Ky., on the 9th of July, aged about 90 years. Dr. Caldwell was a native of North Carolina. He was born in Carbarrus County of that State, of humble parentage, and was compelled to rely, mainly, upon his own exertions for advancement in life. His professional education was commenced with one of the most eminent practitioners in his immediate vicinity, but after a time he repaired to Philadelphia, where, it is said, he became a private pupil of Dr. Rush. He received his degree of M.D., from the University of Pennsylvania, on the 17th of May, 1796, after having defended a thesis of more than ordinary merit, entitled "*An Attempt to Establish the Original Sameness of three Phenomena of Fever (principally confined to Infants and Children), described by Medical Writers under the several names of Hydrocephalus Internus, Cynanche Trachealis and Diarrhœa Infantum.*" Previous to this he was a Fellow of the College of Physicians of Philadelphia, and while he was yet a student had translated, with notes, from the original Latin, the "*Elements of Physiology*, by Jo. Fred. Blumenbach, M. D.," in two octavo volumes. The appendix to this work, on "*Animal Electricity*," from the pen of Dr. Caldwell, is an able effort, which signally proclaimed the future eminence of its author in the pursuits of medical literature. After having received his degree from the University of Pennsylvania, he repaired to Edinburgh, where he distinguished himself for his successful application to study. At his graduation in this school he produced, and afterwards published a Latin thesis, which was favorably noticed as a work of merit, and which attracted no small degree of attention. After traveling on the Continent, and visiting the most eminent schools of learning, he returned to the United States, and for a time settled in Philadelphia, where he devoted a goodly portion of his time to literary pursuits.

In 1801 he published a volume, entitled "*Medical and Physical Memoirs, containing among other subjects a Particular Inquiry into the Origin and Nature of the late Pestilential Epidemics of the United*

States." In 1826 a second volume was published at Lexington, Ky., while he was a Professor in the Medical Department of Transylvania University. On the 5th of February, 1802, he delivered to the Philadelphia Medical Society "*An Oration on the Causes of the Difference between the Endemic Diseases of the United States of America, and those of Europe,*" which was shortly afterwards published. During the year 1812, and indeed for a number of years succeeding to this period, his pen was constantly employed in the production of original papers, or in translating from the Latin or French tongues works of distinguished merit. It was during this period that he presented to the American student in English dress the classical works of Desault, Senac and Cullen.

In the summer of 1819 he was appointed Professor of the Institutes of Medicine in the Medical Department of Transylvania University, and on the occasion of the inauguration of the Medical Faculty, on the 18th of November, he delivered "*An Inaugural Address on the Advantages and Facilities of Establishing a Medical School in the Western States.*" This address was published by order of the Board of Trustees of the University. His associates in this Faculty were Samuel Brown, the originator and founder of the Kappa Lambda Association, W. H. Richardson, Benjamin W. Dudley, the present veteran of Western Surgery, and James Blythe. Dr. Caldwell continued to labor in this school until the spring of 1837, when, on a division of the Faculty, he accepted the chair of Institutes of Medicine in the "Louisville Medical Institute," now the Medical Department of the University of Louisville. In this latter Faculty he labored with untiring ardor until the spring of 1849. In the language of one who ought to know him, Dr. Caldwell was for many years one of the chief ornaments of Transylvania University, and by his energy and industry, his great learning, and his eloquence, had contributed a full share to its rapid rise and wide popularity. He was far more actively concerned than any of his colleagues in procuring from the city of Louisville the noble endowment of the Medical Institute, and his reputation for learning and originality had been of the greatest service to the Institution in its earlier years."

Dr. Caldwell was the personal friend and warm admirer of Dr. Combe, and a strong believer in phrenology. In the winter of 1823–24, the first edition of his "*Elements of Phrenology*" was published. His writings on this subject are familiar to all, and his controversy with the late Dr. Sewell of Washington, must still be remembered by those who read with even no more than ordinary pleasure, the phrenological discussions of men of profound learning, finished genius, and acknowledged ability. But we must bring this notice to a close; we cannot but give the following description by one who knew him well. "He was a tall man, of a rather square and awkwardly built frame, large features, with blue eyes. He had a large and well-formed head, a little bald, with the hair that remained quite gray. He was very earnest and enthusiastic in whatever he engaged—an ardent controversialist, and sometimes when excited quite acrimonious. His remarkable career will form a subject for an interesting chapter on biography in some future publication, which some person familiar with all the particulars of his life ought to write out."

TO READERS AND CORRESPONDENTS.

The following Publications have been received:

A Practical Treatise on the Diseases of Children.—By D. Francis Condie, M.D., Secretary to the College of Physicians, Member of the American Medical Association, &c., &c. Fourth Edition, revised and augmented. 8vo, pp. 732. Philadelphia: Blanchard & Lea, 1853. (From the Publishers.)

A Treatise on Operative Ophthalmic Surgery. By H. Haynes Walton, Surgeon to the Central London Ophthalmic Hospital, &c., &c. First American, from the first London Edition. Illustrated by one hundred and sixty-nine Engravings on wood. Edited by S. Littell, M. D., Surgeon to Willis Hospital for the Eye and Limb, &c., &c. 8vo, pp. 599. Philadelphia: Lindsay & Blakiston, 1853. (From the Publishers.)

Practical Observations on Aural Surgery, and the Nature and Treatment of Diseases of the Ear. With Illustrations. By William R. Wilde, Surgeon to St. Mark's Ophthalmic Hospital, &c., &c. 8vo, pp. 475. Philadelphia: Blanchard & Lea, 1853. (From the Publishers.)

Hallucinations; or, the Rational History of Apparitions, Visions, Dreams, Ecstasy, Magnetism, and Somnambulism. By A. Brierre de Boisment, Docteur en Médecine de la Faculté de Paris, &c. First American, from the second enlarged and improved Paris Edition. Philadelphia: Lindsay & Blakiston. 8vo, pp. 553. 1853. (From the Publishers.)

A Treatise on Diseases of the Heart. By O'B. Bellingham, M. D., F. R. C. S., Member of the Court of Examiners of the Royal College of Surgeons in Ireland, &c., &c. Dublin: Fannin & Co. 8vo., pp. 252. 1853. (From the Author.)

Transactions of the Tennessee State Medical Society, at their Twenty-fourth Annual Session, convened at Nashville, May 4th, 1853. Nashville: J. F. Morgan, 1853. 8vo, pp. 79. (From the Society.)

Transactions of the Medical Society of the State of Pennsylvania, at its Annual Session, held in the city of Philadelphia, May, 1853. Vol. 3. Published by the Society. Philadelphia, 1853. 8vo, pp. 127. (From the Society.)

Croup; its Pathology and Treatment. By Samuel Tyler, M. D., of Frederick City, Md. Frederick, 1853. 8vo, pp. 30. (From the Author.)

Proceedings of the American Pharmaceutical Association, at the Annual Meeting held in Boston, August 24th, 25th, and 26th, 1853. Published by direction of the Association. Philadelphia, 1853. 8vo, pp. 48. (From the Association.)

The Microscopist; or, a Complete Manual on the Use of the Microscope: for Physicians, Students, and all Lovers of Natural Science. Second Edition, improved and enlarged, with Illustrations. By Joseph H. Wythes, M. D. Philadelphia: Lindsay & Blakiston. London: Trubner & Co., 1853.

The Maternal Management of Children in Health and Disease. By THOMAS BULL, M. D., Member of the Royal College of Physicians. Second Edition. Philadelphia: Lindsay & Blakiston, 1853.

Transactions of the Medical Association of Southern Central New-York, at the Seventh Annual Meeting, held at Ithaca, June, 1853. Auburn, 1853.

Address to the Connecticut Medical Convention, at its Session at Hartford, May 11th, 1853. By RUFUS BLAKEMAN, M. D., late President. Published by order of the Convention. Hartford, 1853. 8vo., pp. 38. (From the Author.)

Lecture Introductory to the Second Course in the Medical Department of the University of Nashville, delivered at the Odd Fellows' Hall, Nov. 1st, 1853. By W. BOWLING, M. D., Professor of the Institutes and Practice of Medicine. Nashville, Tenn., 1853. 8vo., pp. 23. (From the Author)

☞ *We regret that our crowded space forbids our noticing at length the two preceding Addresses. They are worthy of the perusal of every member of the Profession; the former giving an interesting biographical sketch of the early physicians of Fairfield Co., Connecticut, and the latter setting forth, in the author's characteristic style, the claims of Nashville, as the great centre of Western Medical Education.*

☞ Our thanks are due Dr. GAVIN MILROY, for valuable English documents relating to public health, to which we shall call particular notice in a future number.

The following Journals have been received in exchange:

The American Journal of Dental Science; edited by CHAPIN A. HARRIS, M. D., A. A. BLANDY, M. D., and A. S. PIGGOT, M. D.; for October. (Quarterly. Philadelphia.)

The Peninsular Journal of Medicine and the Collateral Sciences; edited by E. ANDREWS, A. M., M. D.; for July, August, and September. (Monthly. Ann Arbor, Mich.)

☞ *We are much pleased with the contents and appearance of this Journal, and, from the ability of its Editor and Contributors, it will prove a valuable addition to our Periodical literature.*

The American Journal of the Medical Sciences; edited by ISAAC HAYS, M. D.; for Oct. (Quarterly. Philadelphia.)

The American Journal of Insanity; edited by the Officers of the N. Y. State Lunatic Asylum; for Oct. (Quarterly. Utica.)

The American Journal of Pharmacy; edited by JOSEPH PARRISH, M. D., and WM. PROCTOR, M. D.; for Oct. (Bi-monthly. Philadelphia.)

The New-Jersey Medical Reporter, and Transactions of the New-Jersey Medical Society; edited by JOSEPH PARRISH, M. D.; for Sept. and Oct. (Monthly. Burlington.)

The Medical Examiner and Record of Medical Science; edited by F. G. SMITH, M. D., and JOHN B. BIDDLE, M. D.; for Sept. and Oct. (Monthly. Philadelphia.)

The Charleston Medical Journal and Review; edited by D. J. CAIN, M. D., and F. P. PORCHER, M. D.; for Sept. (Bi-monthly. Charleston.)

The New-Orleans Medical and Surgical Journal, devoted to Medicine and the Collateral Sciences; edited by A. HESTER, M. D.; for Sept. (Bi-monthly. New-Orleans.)

Southern Medical and Surgical Journal; edited by L. A. DUGAS, M. D.; for Sept. and Oct. (Monthly. Augusta.)

Buffalo Medical Journal and Monthly Review of Medical and Surgical Science; edited by AUSTIN FLINT, M. D., and S. B. HUNT, M. D.; for Sept. and Oct. (Monthly. Buffalo.)

The North-Western Medical and Surgical Journal; edited by W. B. HERRICK, M. D., and H. A. JOHNSON, M. D.; for Sept. and Oct. (Monthly. Chicago and Indianapolis.)

Kentucky Medical Recorder; edited by H. M. BULLITT, M. D., and R. J. BRECKINRIDGE, M. D.; for Sept. and Oct. (Monthly. Louisville.)

The Western Lancet and Hospital Reporter; edited by L. M. LAWSON, M. D., and T. WOOD, M. D.; for Sept. and Oct. (Monthly. Cincinnati.)

The Memphis Medical Recorder; edited by Prof. A. P. MERRILL, M. D., and Prof. C. T. QUINTARD, M. D.; for July and Aug. (Bi-monthly. Memphis, Tenn.)

☞ *These are the only numbers of this Journal which have reached us. Will the editors please forward Vol. I. entire?*

The Medical Reporter: a Quarterly Journal, published under the direction of the Chester and Delaware County Medical Society; for Oct. (Quarterly. West Chester, Pa.)

Iowa Medical Journal, conducted by the Faculty of the Medical Department of Iowa University; for Sept. (Monthly. Keokuk, Iowa.)

The New-York Medical Times; edited by H. D. BULKLEY, M. D.; for Sept and Oct. (Monthly. New-York.)

The New-York Medical Gazette; edited by D. M. REESE, M. D.; for Sept. and Oct. (Monthly. New-York.)

The Boston Medical and Surgical Journal; edited by J. V. C. SMITH, M. D.; Sept. and Oct. numbers received. (Weekly. Boston.)

The Western Journal of Medicine and Surgery; edited by L. P. YANDELL, M. D., and T. S. BELL, M. D.; for Sept. and Oct. (Monthly. Louisville.)

The Ohio Medical and Surgical Journal; edited by RICHARD L. HOWARD, M. D.; for Sept. (Bi-monthly. Columbus.)

The Stethoscope and Virginia Medical Gazette; edited by P. CLAIBORNE GOOCH, M. D.; for Sept. and Oct. (Monthly. Richmond, Va.)

Nashville Journal of Medicine and Surgery; edited by W. K. BOWLING, M. D., and PAUL F. EVE, M. D.; for Sept. and Oct. (Bi-monthly. Nashville, Tenn.)

The New-Orleans Monthly Medical Register; edited by A. FORSTER AXSON, M. D.; for Sept. (Monthly. New Orleans.)

Nelson's Northern Lancet and American Journal of Medical Jurisprudence; edited by HORACE NELSON, M. D.; for Sept. and Oct. (Monthly. Plattsburgh, N. Y.)

The New-Hampshire Journal of Medicine; edited by EDWARD H. PARKER, A. M., M. D.; for Sept. (Monthly. Concord, N. H.)

New-York Journal of Pharmacy; edited by BENJ. W. MCCREADY, M. D.; for Sept. (Monthly. New-York.)

The Western Medico-Chirurgical Journal; edited by J. F. SANDFORD, M. D.; for Sept. (Monthly. Keokuk, Iowa.)

The Journal of Psychological Medicine and Mental Pathology; edited by FORBES WINSLOW, M. D.; for July. (Quarterly. London.)

Dublin Quarterly Journal of Medical Science; edited by ———. (Quarterly. Dublin, Ireland.)

☞ *August number not received.*

Dublin Medical Press; edited by ———; for Aug. and Sept. (Weekly. Dublin.)

The Upper Canada Journal of Medical, Surgical, and Physical Science; edited by ———; for Sept. (Monthly. Toronto.)

Monthly Journal of Medical Science; edited by WM. ROBERTSON, M. D.; for Sept. and Oct. (Monthly. Edinburgh.)

The Retrospect of Medicine; edited by W. BRAITHWAITE; for June. (Half-yearly. London.)

The Half-yearly Abstract of the Medical Sciences; edited by W. H. RANKING, M. D.; for June. (Half-yearly. London and Philadelphia Edition.)

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All remittances of money and letters on the *business* of the Journal should be directed to the Proprietors.

☞ Particular attention is requested to the above, as parcels, communications and exchanges have failed to reach us, owing to inadvertence, or want of attention to these notices.

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